Ohio Cultivator

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The Apiarian.

Bee Keeper's Convention.

EXHIBITION OF BEE HIVES.

Mr. Langstroth moved an amendment to a resolution passed at the last annual meeting, The amended resolution as passed, read as follows:

That it be one of the standing rules of this association, that all persons having any improvement in bee hives, are invited to present them for investigation at any of the regular meetings of this Association. And that while the Convention is willing to hear a brief statement of the patented features of any hive, they will not for divers reasons allow any discussion of the legality of the patented features.

Dr. Kirtland stated that the object of the association would be advanced by allowing every gentleman an opportunity of setting forth the advantages claimed in his improvement.

Improvements in hives was the next subject under consideration. Mr. Corner of Columbus then presented his hive. This hive is so placed upon its frame as to give it an inclination of an inch and a half. Its advantage consisting in its accessibility, being easily opened; its shape is also an improvement on other styles, as it generates proper heat in winter. It presents nearly the appearance of the old box hive. Bees may be as easily hived in it as in the old style, ample room being given to pass through it. The hive opens from either side, the center being fixed. They are also inclined in a step-like manner to allow them to swing, which is the particular feature of the hive; also that the sideboards are convertible into doors.

Objections were raised to Mr. Corner's patent, on the ground that the combs cannot be changed from one hive to another on account of the difference in the size of the frames. Also the difficulty that would be experienced in finding the queen bee. This objection is entirely groundless, as the superior accessibility of Mr. Corner's hive abundantly proves.

Mr. Flanders then exhibited his hive.—The case consists of incline sides, so that bees clean out the hive on entering it. An advantage this frame possesses is its cheapness. The frame is formed of three sticks fastened together, so that they cannot wind. In drawing combs from a hive, these curvatures are found to be inconvenient. The angular sides of the frame will hold combs transferred to it, but in a square frame they must be fastened. This hive is also inclined. The patented feature of the hive is in its general form, not only the frame, but the space that encloses it, that the bees thereby clean out the hive.

Mr. Langstroth states that bees store their honey above, and brood below, hence, the brood coming so near the outer side, and bees not being able to cluster, could not keep up the animal heat.

Mr. Langstroth's hive being the next in order was next exhibited. The combs are variable in thickness, hence the frames are so made as to be placed at irregular distances to accommodate the combs. To prevent combs from coming too near together, staples are so placed as to obviate this difficulty. A series of moveable comb guides are placed with their feet on the bottom of the hive, which render the combs straight. A moveable drop bottom board may be attached to the hive, which prevents the bees being pinched. Air may be let in by it and the refuse cleaned out. Another more im-

portant feature is the ventilating process, which also affords a window, by which the hive may be cleaned. This is preferable to the moveable bottom board. Still another feature is the narrow surface on which the frame rests. In wintering bees one or more outside frames are left out, to lessen the number of combs. By means of small blocks the entrance may be enlarged or made smaller at pleasure.

The new features in this hive are these: The space above tops of frames, to prevent gumming of boards, etc.; the moveable comb frame kept from side and bottom of hive, not closely fitting, etc.; on a moveable divider which inserts from the top, whose object is to divide the hive, and also to separate the hive so as to have a queenless part; trap for excluding and catching moths and worms, and also to enlarge entrance.

Mr. Morgan's hive was next exhibited. The entrance is under the centre of the hive. The frame is triangular. The cover is made to slide on as are also the boxes. A miller ledge is provided to catch filth.—This hive is not patented, but could be manufactured for about $2. Its plan is simple and it is easily made.

Mr. Twining's hive being the next upon the list, the Hartman hive was first exhibited. The patentee claims, in combination with the box, a frame, the inclination of whose sides is an improvement; this is an improvement also on the triangular frame, being the mean of the two extremes—the difficulty in the triangular frame being that not enough bees can collect at the bottom to generate bodily heat. This frame has the advantage over the Langstroth patent, in that the bees build straighter. This is a self cleaning hive. A wire screen is placed over what is called a miller drawer through which refuse matter passes. Ventilation is also regarded in this hive. There are three decoy entrances, through which air comes to the bees. The entrance may be entirely closed and yet sufficient air furnished. Cloth or wire being stretched over the entrance also excluding robbers.

Mr. Twining desired to state that the Hartman hive presented by him should be known as "Hartman's Trapezoidal Moveable Comb Hive," in order to distinguish it from another Hartman hive. He claimed the trapezoidal moveable frame to be an advantage over other forms, as it can be slid in the hive with less danger of crushing the bees. It is also more convenient in transporting from one hive to another, as the comb can be wedged into the frame, and thus needs no fastening. In the triangular frame he claimed that the queen bee will not generally go within six inches of the point of the angle to deposit eggs. She might do so in very warm weather, but ordinarily will not do so. The trapezoidal shape also allows better ventilation, and thus allows the bees to be shut in. Another feature is the drawer at the bottom, covered with a wire screen, which allows the bee bread and fine pieces of comb to fall through.

Mr. Twining then proceeded to describe the Metcalf Moveable Revolving Comb Hive. This is a combination of four hives, revolving on a common center, the object in revolving being to strengthen weak hives.

THE BEE MOTH.

A discussion in relation to the Bee Moth sprang up during the debate on hives. Mr. Langstroth suggested that the moth was not a native of this country, but was probably imported in the clothes of some immigrant from the bee districts of Europe.

Prof. Kirtland stated that it was first noticed in the Boston Patriot of December, 1805, or January, 1806, and it was stated that it had been seen in that neighborhood for about two years. Its first appearance in Ohio was in 1828, so far as his investigations had gone, and it had been stated that its first appearance in Illinois was in the year of the Black Hawk War.

Mr. Langstroth alluded to the great destructiveness of the bee moth at its first appearance, and its present comparative harmlessness. He attributed this to the fact that the bees have become acquainted with its dangerousness, and combined to repress the increase of the moth.

ARTIFICIAL SWARMING.

The question of artificial swarming came up for discussion on the meeting of the Convention in the afternoon. Dr. Kirtland cautioned bee raisers against over-doing it, that being the greatest, and in fact the only danger in the practice.

Mr. Langstroth thought artificial swarming to be the safest, best and surest method, and stated the result of many experiments on this subject. At the same time he thought the bee keepers had abused the practice by overdoing it.

Mr. Twining thought the proper time for dividing a swarm is when the young queen bee commences piping, and is still capped over. If left alone the old queen bee will

probably attack the young queen, kill it, and then swarm. The young queen should be removed whilst still capped, with a part of the swarm. The bees would probably swarm on the next day of themselves, if this is not done, and therefore no injury can be done by thus swarming artificially.

Mr. Flanders advocated Mr. Langstroth's views as to the importance of artificial swarming.

Mr. Langstroth said it sometimes happens that in one district bees will swarm abundantly of themselves, whilst in another district, not far distant, artificial swarming is necessary.

Mr. Twining said that when bees are drummed out of a hive they are apt to desert the hive altogether, and take to the woods. The plan of artificial swarming by using the moveable comb hive is therefore far better.

Mr. Brown related his experience, going to show that artificial swarming by the use of the moveable comb hives, when not overdone, is the best plan.

In answer to a question, Mr. Langstroth said that in this climate one new stock to two old ones would be about the proper increase. In warmer climates the increase might safely be much greater.

LECTURES AT THE FALL MEETING.

Mr. Thomas Brown moved that Rev. L. L. Langstroth and Prof. Kirtland be invited by the Association to deliver lectures on Bee Culture at its fall meeting.

Prof. Kirtland stated that he must positively decline lecturing any more. The name of Mr. Sturtevant was substituted for that of Prof. Kirtland, and the resolution was adopted.

Prof. Kirtland moved the following resolution, which was adopted:

Resolved, That when this Association adjourns, it adjourn to meet on the first day of the next Annual State Fair in this city, and that C. H. Robinson, Thomas Brown and Dr. J. P. Kirtland be a Committee to secure the use of a suitable Hall, to provide a suitable flag, to designate the place of meeting, to advertise the time and place, and to make all necessary arrangements for the said meeting.

Mr. Ely moved that the Standing Committee be instructed to correspond with Mr. Wagner or other distinguished apiarians, inviting them to lecture during the State Fair. The motion was adopted.

KILLING OLD QUEENS.

Mr. Langstroth gave it as the result of his experience that the queen bee decreases in fecundity as it grows older. He thought that after the third season the old queen should be removed and killed, and great care taken that its place be supplied by a young fertile queen. Attention should be paid to having a supply on hand of young fertile queens, to be in readiness for supplying new swarms, and to be prepared for accidents to queens in the hives. He threw out some suggestions in regard to hatching young queens by artificial heat.

Mr. Sturtevant's experience was that the queen is as good in the third year as in the previous years, and frequently it is so in the fourth year also. The queen should not be taken until the fourth year, and then should not be removed until a perfect and fertile young queen is quite ready to take its place.

RENOVATING MOULDY COMBS.

Prof. Kirtland said he would like to get some information on the subject. His experience had rather been against the profitableness of the practice, but others had seemed to have had different experience.

Mr. Robinson said he had taken some very mouldy comb and held it before the fire, which had the effect of entirely removing the mould and making the comb again serviceable.

Mr. Langstroth said that his experience has been that cleansing the comb only rendered it into wax.

The Convention then adjourned *sine die*.

Cut-Worm and Corn Grub Killer.—Dr. Asa Fitch, the eminent entomologist of the N. Y. State Agricultural Society, says, "I doubt not you have noticed in plowed fields a large black beetle with most brilliant golden dots placed in rows on its back. It is the *Calosoma calidum* of entomologists, and its eggs produce the *corn grub killer*. It is a most inveterate foe of the cut-worm, grasping the worm in its strong jaws, and in spite of its violent writhing and struggling securely holding it, and when it finds these worms in plenty, it gorges and surfeits itself upon them, till it is so glutted and distended as to be scarcely able to stir —for it never knows how to let a cut-worm alone when it meets with one. It is continually hunting these worms, feeding on nothing else if it can obtain them. Both it and the golden-dotted beetle which produces it, therefore, should never be harmed."

Wisdom is a nut, which, if not chosen with judgment, may cost you a tooth, and pay you with nothing but a worm.

Sheep Department.

A Talk About Sheep.

At the Mass. Legislative Agricultural Club.

Mr. Flint occupied the chair and opened the discussion. He believes that the rais'ng of mutton can be made profitable to the farmer. In the western portion of the State, sheep have been raised considerably with a view to improving pastures, and with some success.

Mr. Howard spoke of the keeping of sheep in a national point of view. The Poets of Great Britian have sung of the glory of the realm as coming through their flocks. In England, sheep are kept upon almost every farm; whereas in France you may travel almost a day without seeing a sheep.

In Great Britian there are some 50,000,000 of sheep. So many are kept, partly because much of the land is good for nothing else but for sheep to range over. On most of the land no fertilizer is put upon the soil, except that dropped by the sheep. The pastures thus managed, have become better, and so have the sheep. The same facts are generally true in this country, where pastures have been fed by sheep.

Mr. Fearing looked at the subject in a moral point of view. Young men hasten to the city to thrive. But we have too many merchants, lawyers and physicians. The true policy is, to encourage young men to stay at home, and cultivate the land.

At Hingham we have been troubled with dogs. But we united as a body of sheep owners, and proper laws were enacted against the dogs, and we have not been troubled since.

His pasture for sheep contains twenty-eight acres, and it has been improved by the sheep. His sheep have aided him in getting rid of the briars from his pasture.

Mr. F. could not speak definitely on the profits of sheep. They need a warm barn, protection from the storm, and a plenty of nourishing food. He likes the South Down sheep best. It gives good mutton enough for any Massachusetts man to eat. He has never lost a sheep by disease or scarcely a lamb. And this success has been owing to the good care he gives his sheep. His flock gives him six and one-half pounds of wool to a sheep, on the average; but they are not all South Downs.

His new sheep-barn is forty feet long, by twenty wide. It holds hay for sixty sheep, and it is arranged so that there is little waste of hay. It can be built in the interior towns for $250.

Mr. Andrews, of West Roxbury, said, summer before last he raised much cow-cabbage, and soon after bought ninety sheep. They eat the cabbage and but little hay. He sold most of his sheep the next winter for fifty dollars more than they cost him.

Eight sheep will not consume more food than one cow. These will produce lambs that will sell for fifty dollars. So he regards sheep raising profitable.

He quoted a strong article in favor of sheep raising, written by Mr. Harris, of the Genessee Farmer, which goes to prove that in no country can the fattening of sheep be made so profitable as in this.

Mr. Wetherell spoke of a farmer in Hampshire county who had experimented with Leicester and other sheep. He keeps them in a yard between two barns. He boils potatoes for them, which he mixes with grains for their food. His prospective view is very encouraging. Heretofore he has been a dairy farmer.

Mr. Grennell, of Greenfield, has succeeded with the Oxfordshire sheep. He prefers them for raising mutton to the South Downs.

Pastures are improved by keeping either cows or sheep in them. Sheep do the pastures the most good.

Many towns, away from the railroads, are rather going backward. In such towns, where the land is rather poor, the people may be enriched by sheep husbandry.

Mr. W. does not believe in the advantage of giving so much encouragement to the growing of forest trees. He would grow mutton, instead of wood, upon the poor lands.

Dr. Loring, of Salem, said there can be no doubt as to the profits of sheep husbandry. Formerly, there were many sheep in the State; now they are few. In Berkshire, fine wooled sheep are kept profitably. The same is true in Vermont. Farming a few years ago began to decline in this State; and sheep husbandry was the first to feel it.

The secret of a want of sheep in the State is because that other branches of farming were thought to be more profitable.

Mr. Roberts proceeded to exalt the Oxfordshire sheep. His bucks shear from nine to twelve pounds each; and his lambs he sells for from $3.75 to $4.50 each. His pastures are much improved by keeping sheep; and he believes that sheep husbandry can be made profitable in the State.

For the Ohio Cultivator.

Usefulness of Birds.

As a general thing the value of birds is not fully appreciated; besides the variety and richness of their plumage and the sweetness of their songs, which is one great attraction; they possess other merits of far more value to the people in destroying millions of noxious insects which infest our land, destroy our crops, and lay waste our fields and gardens. And it is an alarming fact that the number of the birds is decreasing, while that of the insects is increasing rapidly. It is certain that crops are injured worse of late years by insects than formerly.

The grub worm is getting to be our greatest pest; last season in places the grass was literally eaten out by these worms; the chinch bug also infests our cornfields, making dreadful havoc; our forests also are sometimes stripped of their foliage by green worms. If instead of harassing and destroying the birds, all would try to encourage them to increase and protect them, such disastrous effects might be prevented.

The despised crow and blackbird, for instance, are hated and destroyed, and their nests robbed by nearly every one, but they are of great value in destroying worms and grubs of all kinds, that infest our cornfields; in fact the grub worm is the choicest food of the crow. It is true that crows and blackbirds sometimes plunder our fields, but they repay the damage in destroying insects which do double the damage that they do. There is no bird but does more good than harm.

Many people suppose the hawk and owl to be of no value; true, they make a meal of our fowls sometimes, yet they more than repay by killing the mice which destroy our grain in vast quantities. Swallows are also very valuable, their chief food being moths, bugs and other insects taken on the wing. A nest of swallows should never be harmed; the food of quails which are so shamefully slaughtered yearly, is principally insects in the summer, especially the chinch bug, which is so destructive to corn. A quail should never be killed; you had better never taste quail meat than to have your crops destroyed. A pair of wrens have been known to carry hundreds of caterpillars to their nest in a day; and other birds of course destroy insects in proportion; so multiply what one bird kills by the the thousands of birds that are killed annually, and it is no wonder that the number of insects is so much greater now than formerly.

And now farmers, planters, sportsmen and people in general, let me entreat you for your own good, do not kill the birds; when they come around you do not scare them away and throw stones at them, but be kind to them, make small boxes and erect for them to build in, and they will amply repay you in destroying the insect pests of the country.

J. A. Converse.

Pleasant Valley, April, 1862.

For the Ohio Cultivator.

Rat Clubs in Clinton.

It will be of interest to tbe readers of *Field Notes* to know that in Dover and the German neighborhoods the boys have formed an association for the destruction of rats. Thus, 12 boys of each neighborhood form a company, having a Captain. Then they go round to the farms, etc., killing all the rats they can find.

On the 28th of last month they met at our saw mill to count rat-tails. Dover had 1,169 tails, the German Company had 2,280, or there about.

Dover was *loser*, and of course had to treat *to a supper!*

Last seventh day P. M., was apointed, Dover invited Germans and ladies down. Met at Dover school house at 3 P. M., Dover boys and girls "all aboard," had a splendid supper spread, at which over 60 of our young men and maidens, boys and girls, partook with a will, after which we had some "rat" speeches, votes of thanks, etc. Adjourned—*and went home with the girls!*

Let other neighborhoods *go and do likewise!* Very respectfully,

J. Farr Fraizer.

Clinton Co., April, 1862.

Veterinary.

For the Ohio Cultivator.

Copperas as Horse Medicine.

In answer to "C. T.," of Cass Co. Ind., as to what amount of copperas would be safe to give to a mare with foal and a mare not with foal: The action of the copperas will be the same in the one case as in the other. Sulphate of iron (i. e. copperas,) is given to the horse as a mineral tonic, acting primarily on the stomach, the action it excites in that organ being communicated generally by the medium of the nerves to the rest of the system, and received into the mass of the blood. Its effects given in proper doses, are to increase the force of the circulation, to augment the animal heat, promote the various secretions, or moderate them when morbidly increased, quicken digestion, and render muscular action easy and vigorous.

But before copperas is given, it is generally necessary to give some warm purgative medicine. While the horse is taking tonics, great attention should be paid to his diet; and it would not be going too far, were I to assert that, by judicious management with regard to food, grooming, exercise, and occasionally a mild physic, horses would seldom require copperas. The dose of copperas is from two to four drams daily.

Zanesville, O. T. Webb, V. S.

Laminitis in Horses' Feet.

J. P. Livezey, V. S. *Cincinnati.*

My attention was called to an iron-gray stallion, aged about eight years, the property of Mr. George Johnson, of this city. I found the fore feet very hot and some tumefaction around the coronet. Gave by drench one ounce of nitrate potass. For local application, applied as a sedative diluted *Cannabis sativus Indicus.* 30th. Found the patient slightly improved, gave one ounce of nitrate potass, and continued the above local application. 31st. The patient still improving; gave, as usual, one ounce of nitrate potass, and ordered the local application to be continued. Nov. 1st. Gave one ounce nitrate potass, and discontinued the local application. 2nd. Gave one-half of an ounce of nitrate potass. 3rd. Found patient free from lameness, and discharged the case.

This is a very interesting case, and shows the value of simple and scientific treatment. In former times it was customary to bleed the horse at the toe, give him a physic ball, and practice other inconsistent barbarities upon him; but the light of modern science has now dawned upon the profession, and this disease is now treated upon the principles of science and mercy. Many thousands of valuable animals affected with this disease have been ignorantly sacrificed in consequence of a want of proper knowledge of the nature of the disease, and the modus operandi of the therapeutic agents. The fact is that it is a condition of active congestion, and should be treated on the same general principles ot other active congestions of the body; hence I contend that the orthodox treatment is not in accordance with the experience of modern practitioners, and every honest veterinary surgeon should set his face against such barbarous treatment.—*Stock Journal.*

Goats on Farms.

H. G. T., wonders what can be urged against the keeping of goats. I answer—not much, if you are living on the stony hills of Palestine, or the desert of Sahara, or the Plains of Colorado, or the parched, desolate valleys of Utah, where a tree is unknown, and its production is barely a possibility. In fact, I think the goat destined to prove a great blessing to all that vast region lying westward of the banks of the Platte, and eastward of the Sierra Nevada. In a shade-blest, fruitful country like this, however, the goat is a nuisance and a terror. The utmost vigilance will not prevent the destruction of your rarest fruit and shade trees, if you keep Billy and Nanny on your premises. I speak feelingly on the subject, for my experience has been a sore one.—My last trial was with a she-goat (bought for her milk for an infant,) and three young ones—all fine animals, but for their invincible propensity to eat anything that should not be eaten. I am not certain that either of them would have barked a crowbar unless very hungry; but I would not like to insure the dry, cork-like rind of the big trees of California, (from a foot to eighteen inches through,) against the teeth of any goat I ever harbored. If you must have goats, keep them, for their milk is the best food

that can be had for young children; but tie them fast in some lot where nothing grows that you want to survive, or shut them up in a barn, and be sure they never have a chance of liberty. A goat at large on a Yankee farm will do more damage in a single week than can be repaired in ten years. —*Am. Agriculturist.* H. GREELEY.

The Garden.

For the Ohio Cultivator.

Dwarf Cherry.

The Mahaleb, or St. Lucie cherry is a French variety, of low spreading, dwarfish habit, producing a small dark purple fruit, quite astringent and of no value.

The Mahaleb is used extensively as a stock for working the cherry upon. It is extremely hardy, transplants very successfully, and seems equally suited in clayey or light soil.

All varieties of the cherry are more or less dwarfed when worked upon the stock. Without root pruning, it is rather difficult in our rich western soil, to keep the free growing Heart and Bigarreau varieties within the space usually allotted to dwarf trees. The Dukes and Morellos are better adapted to this purpose, making nice little trees, very prolific, and really quite ornamental; they are very hardy, not liable to crack or gum like the stronger growing Heart and Bigarreau varieties.

The cut above is designed to represent a dwarf cherry tree in bearing. We do not think the artist has succeeded very well in illustrating his subject. It will however serve to show the form in which such trees should be trained.

The following are particularly valuable for growing in this manner:

Early May, Large English Morello, May Duke, Reine Hortense, Belle Magnifique, Belle de Choisey and Carnation.

A. G. HANFORD.

For the Ohio Cultivator.

GARDEN TALK.

Don't be satisfied with plain potatoes and pork all summer, but go to work right now, and lay out a spot for a garden in which to grow early beets, peas,—oh! how good these are with roast lamb, — a few radishes as a relish for breakfast of a hot morning, or some crisp, delicious lettuce, with a little sugar and vinegar on it.

The snap beans all like, and better yet the case knife shell beans, that come a couple of weeks earlier than the rich old Limas or butter beans—don't do without them. Then there is the early solid heads of cabbage, so good as "cold slaw," or boiled: and the young greens you get from the thinning out of the beet bed. Tomatoes, if you have once learned to eat, you would as soon think of doing without, as an old smoker would of going without his pipe. As midsummer comes on, how deliciously cool is a nice nutmeg or water melon, gathered early in the morning and laid away in the cellar, until you come in about noon heated from work.

Raspberries, strawberries, etc., should also be in your garden. If you have never had them, don't say they are for the rich, but too much work for poor folks. It's not so: you with your land, are the very ones to grow all the small fruits in abundance for your family, for it will not take over one week's work in a year to do it, and when once you have tried them, you will find your health, and the cheerfulness of your family more than full compensation. One other thing:

If you want your boys and girls to learn

to love their home, don't let them go to their neighbors to eat small fruits, and get now and then a taste of some good vegetable, then come back home and find nothing but pork and potatoes, or for change, potatoes and pork—we say don't do it. Be wise now, make the little things around home such as attract and please the minds of the young. So shall ye in your old age be cared by them.

Carrots for Horses.—Don't make a mistake this year my friends by permitting it to pass without growing a crop of carrots to feed your horses in winter. One acre of carrots is worth five of oats for this purpose, if we throw away the straw; or if we value the straw, then one acre of carrots is worth more than three of oats; or if again we dispose of the carrot tops green for coloring purposes, then our first proposition would have to have seven put in place of five. Now, the plowing of the ground for carrots will cost once more, the seed no more, acre for acre, but the labor of sowing and harvesting will be about as one of carrots, to four of oats.

Next, the carrots during the winter, if fed, washed and chopped, and mixed with a little cut hay and a sprinkling of salt, will keep the horse in better condition—his coat smooth and oily, and his general health better than if fed with oats. For hard fast driving on long distances, for livery stables etc., where the owner never knows how far or fast a horse is driven, they will not answer as a regular feed, but even livery men, omnibus owners and others like to feed more or less of carrots every winter to their horses.

Good light, loamy, or even sandy land is best: plow it eighteen to twenty inches deep, *early* in the spring, or as soon as it will answer after the frost is out. Cross plow again say the tenth of May, harrow thoroughly until it is quite fine and mellow, then sow two pounds of Long Orange carrot seed to the acre, in drills eighteen or twenty inches apart. At the first weeding, thin out the plants to six and eight inches apart in the rows. Keep weeds down until after August, and your crop will be not far from one thousand bushels to the acre.

The Cucumber.—This fruit, now considered indispensable to every table, either cut up raw in vinegar, cooked in butter or dished as pickles, was cultivated over 300 years ago, and varieties were then known—according to history—that excelled any now grown. The skill by which they were then grown has now no equal. Young shoots pinched off to prevent the vines extending, form a very good substitute for spinach or other greens.

Soaking Seeds.—A little chloride of lime in water, forming a weak solution, is said to be a capital soak to assist seeds in germinating rapidly.

Deep Planting.—The consequences of too deep planting of trees, are too plain to require a word of comment. "He who runs may read," and so he who cares to observe can see this error at a glance. When such an error has occurred, it is better at once to take up and replant the trees, rather than leave them thus to encumber the ground, and disturb your temper by their puny, sickly growth. Invite the roots to keep near the surface, by keeping the top of the ground always loose—by use of the hoe, or by a covering of straw or chips, to the depth of three or four inches.

Grapes.—Watch your grape vines when the buds start in the spring, and rub off all the buds that you do not want to grow.

ELLIOTT.

Grafting Grape Vines.—A correspondent of the New Hampshire Journal of Agriculture gives a very simple mode of grafting grape vines. He says:

The vines should be from three-fourths of an inch to an inch through. Cut them close to the ground when the leaves are the size of a cent. Split the stock and set the scions as you would apple scions, excepting that the scarf should be longer and the scion larger. This is necessary on account of the pithy nature of the scion. Cover the stock three or four inches deep with soft earth, without wax, or anything else, unless the stock is too small to hold the scion, and then it may be fastened with a string. Keep all the sprouts picked closely the first sea-

son. The scions should be cut in the fall, having three good buds on them. Care should be taken that they keep moist. I treated some barren vines in this way, that I had in my field, and the scions grew some ten feet the first season. One bore a bunch of grapes. In sixteen months they bore three or four quarts of good grapes.

For the Ohio Cultivator.

Prevention of Cucumber Bugs.

Last spring I tried the following experiment: I procured some coal oil as it ran from the retorts, strongly odorous. With this I saturated pieces of paper and cloth of the size, say of my hand, and placed them among my young cucumber vines, in and around the hills, putting a small stone on each paper to keep it from blowing away, and taking care that no oil touched the vines. The bugs did not trouble those vines.—Some days after I found bugs among other vines in another part of the garden. I placed oiled papers among these and the bugs disappeared, and then I placed the preventive among all my other vines, pumpkins, squashes, etc. Not one was injured by the bugs, and all bore good crops.

I should state that some time after the first application, when the oil had evaporated, and the odor was nearly gone, I saw a very few bugs among the vines, but on re-saturating the papers with oil, they disappeared, The oil should be renewed occasionally until the vines have become vigorous. The vines of my neighbors were injured by the bugs as in other seasons.

My experiment seemed successful, but I will not warrant it as *sure*, until a further trial. J. M. E.

Canfield, April, 1861.

Peas.—Get your peas, early and late kinds, and sow them all at the same time. It is in the variety of the peas, not in your early or late sowing, that makes early and late peas for your table. The *Tom Thumb, Blue Imperial* and *Champion of England*, are among the most desirable sorts.

Don't live in hope with your arms folded; fortune smiles on those who roll up their sleeves and put their shoulders to the wheel.

Flower Garden and Pleasure Grounds.

Prepare ground for planting. Soil loosened two feet deep dries out less in summer than soil one foot deep. Rich soil grows a tree larger in one year than a poor soil will in three. Under-drained soil is cooler in summer than soil not under-drained. The feeding roots of trees come near the surface; therefore plant no deeper than necessary to keep the tree in the soil. If there be danger of blowing over, stake it, but don't plant deep. One stake set at an angle is as good as two set perpendicular. Straw or mat set round the tree keeps the bark from rubbing. Large stones placed around a transplanted tree are often better than a stake. They keep the soil moist, admit the air, and encourage surface roots. Shorten the shoots at transplanting. This induces growth, and growth produces roots; and with new roots your tree is safe for another season. Unpruned trees produce leaves, but little growth and less new roots.

Place broad-leaved evergreens where they will get no sun in winter, yet away from where the roots of trees will make the ground dry in summer. Deep soil but shallow planting is all important for them. In transplanting, take care of the roots. Good roots are of more importance than good "balls." Balls of earth are useful in keeping fibres moist; but don't sacrifice the best fibres five or six feet from the tree for the few fibres in the ball at the base. When roots are rather dry, after filling a portion of soil, pour in water freely. After all has settled away, fill in lightly the balance of the soil, and let it rest for a few days. This is as a remedy, not as a rule; for watering this way cools the soil, ultimately hardens it, and in other respects works to the injury of the transplanted tree.

Unless inside of a round ring, or circular walk, don't plant trees or shrubs in formal clumps. They are abominations in the eyes of persons of taste. Meaningless irregularities form the opposite extreme. Remember, "art is nature better understood."

In your flower-beds, if the plants sickened last year, change the soil. Renovated earth is renewed health to consumptive flowers. Sow annuals as soon as the ground is warm. Too early sowing and deep covering rots seeds very often. This is frequently the cause of one's seeds being "bad." Prepare flowers in their winter quarters for the summer campaign, by gradually inuring them to the air before setting out finally. Set out when all danger of frost is

over. Don't set out a plant with a dry ball; but water well while in the pot an hour or so before.

Arranging flowers in beds affords room for a display of taste. Edgings to beds are now common. Amaranthus tricolor was one of the prettiest we saw last year. Perilla nankinensis is a coarse plant when close to the view; but a mass seen from a distance is a beautiful object. Amongst the newer bedding plants, Gazania splendens proves better than we expected.—*Gardener's Monthly.*

For the Ohio Cultivator

Improve your Grounds.

The merchant is careful to so arrange his business that his goods will appear to the best advantage and command the highest price, and yet the merchant as well as the farmer and mechanic, too often neglects to so arrange and plant out with trees etc., their landed property, that it may bring them the largest return. Property, real estate, to make one peice command a higher price than its neighbor adjoining, must have something about it to take the eye favorably of the purchaser.

Thus two men own farms or lots side by side; the one lays out roads and paths from a plan of a good landscape gardener, and plants out some fruit and ornamental trees, costing from fifty to one hundred dollars. These are cared for in the cultivation of the soil, and ere the first year has passed, the attention of the passer by is attracted to the added beauty of the place.

The other man leaves his farm or lot just as he bought it. "Can't see any good in spending money for fancy walks and nonsensical shrubs, evergreens and the like," and so his place is left barren and unattractive.

Sale day comes—the property that has the few trees etc., takes the eye; the trees are already grown, the would-be purchaser is pleased with the appearance, thinks a moment, "Why here is so many years saved, here are trees ready to bear,"—of course he buys the improved place at a price certainly more than four times over the extra amount its trees have cost.

Now is the time to plant; think of it, you that have lots yet unimproved. Plant out trees. It will prove a good investment of your money. ELLIOTT.

For the Ohio Cultivator.

The Best is the Cheapest.

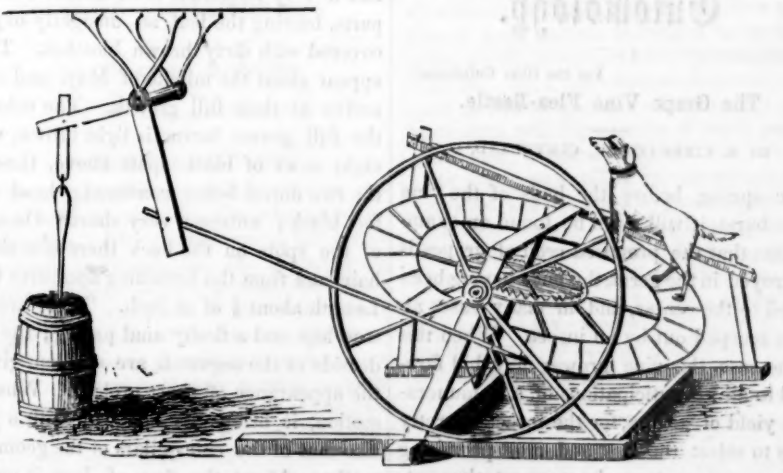
It should be an invariable rule with every cultivator of farm or garden to procure, plant and sow none but the very best of field grass, grain or garden seeds. It also should ever be the care of every one to examine carefully the probability of real purity of seeds of the same variety sold by different establishments.

The difference of price, one shilling or one dollar, is a matter of mere insignificance, and should ever be so regarded; but we fear too many look to the present shilling rather than ahead to the future dollar. It costs no more to prepare the land, no more to plant, no more to harvest the crop, whether poor and invaluable seeds, untrue in character are used, or those that are pure, fresh, and the product of which bring the most actual return in dollars and cents.

Now what is true of seeds is also true of fruit trees, vines, etc.,—one really good, stocky tree, allowing the kinds to be the same, being worth at least four tall whipstalk stems; for the labor of preparing the land, planting, etc., is alike, and the stocky tree grows right along and shortly produces its fruit, while the slender stalk will weave and spring around, breaking away all its new roots in every storm of wind, and four years after planting will be found little better than when first set out.

Again, in tools the best is the cheapest. One good manure fork of Partridge's make, costing two dollars, will outlast six ordinary dollar forks; and so with plows, rakes, etc., etc. Men also will accomplish one *fourth more work* with good, nay the *best* tools, and this of itself would soon more than amount to the whole of first cost. Again we say, get the *best* always, no matter what the cost

The pebbles in our path weary us, and make us foot sore, more than the rocks, which only require a bold effort to surmount.



A Cheap Dog Power.

Every farmer or country mechanic who has a big dog, can put him to practical use by setting him to churning on an inclined wheel plane, like the illustration above. The machinery of this dog power is so simple that a specification is hardly necessary. A light shaft with arms to support the circular floor, the lower end of the shaft with a metal point set upon a metal bed plate, spotted so as to keep the pivot in place; a frame to steady the upper end of the shaft unless the upper end can turn in a yoke in the ceiling; a balance wheel and pitman geared to an elbow to which the dasher is attached, vibrating in a hanger attached to the ceiling, completes the machine.

We saw a dog power of this kind which was in almost daily use at the residence of I. T. Reynolds, in Milan. This was placed adjoining the milk cellar, and the dog was so well trained that he had only to be told to go to his work, when he at once leaped upon the wheel, and trotted away until the churning was finished.

We also saw a large mill constructed on the same plan, on the plantation of Brutus I. Clay in Kentucky; this mill was propelled by half a dozen mules or unbroken colts, put upon the tread and kept with their heads up the grade, and was used both for sawing small timber, and grinding feed for the farm stock and hominy for the darkies.

For the Ohio Cultivator.

A Safe Business.

Few who engage in mercantile trade ever reach mature life with any property. Ninety per cent. become ruined as to property or credit before they are forty years old. There is one business however, that while its first years are trying and yield only a small income, is nevertheless a safe business, and one that each year increases its additional income with little or no additional capital, and no worrying about discounts, tariffs, or money pressures. This business is Farming—go into it then, all you young men who have good health, and strong arms. Sit down and figure up the matter.

Take five acres if you cant get no more. Set it out to orchard, plow and cultivate it. The return will be, even the first year, more than you could get as a clerk, and you will not have to work more than half as hard, and beside you will always be your own man. Can go to school or lectures when you please. Go into farming just as a prudent man does into trade—small at first, increasing year after year, until you have all you can do, and all your wants require.

PAUL.

Matched Horses.—An intelligent farmer, being asked if his horses were well matched, replied: "Yes, they are matched first-rate; one of them is willing to do all the work, and the other is willing he should."

"Don't cry, little boy. Did he hit you on purpose?" "No, sir, he hit me on the head."

Entomology.

For the Ohio Cultivator.

The Grape Vine Flea-Beetle.

BY J. KIRKPATRICK, CLEVELAND, O.

In spring, before the buds of the vine have burst, it will often be found on examination that the promised crop of grapes is destroyed in the germ, the buds having been bored to the center, and in many cases almost scooped out by an insect. When this is the case, the vine grower may bid farewell to all his anticipations of a remunerative yield of grapes, for the insect is pretty sure to select the best and most promising buds on which to make a repast, thus eating, at a mouthful as it were, two or three bunches of grapes. This little pest has become more numerous lately than it was a few years ago, for although indigenous on our wild vines, it is but recently that its ravages have extended to the vineyard. Now it may be found in great numbers in many of our city gardens, especially in the north part of the State.

Last year the crops of several vineyards were entirely destroyed by it in that section, and near the shore of Lake Erie. It is a beautiful little beetle belonging to the old genus *Hatica* or flea beetles, so called from their saltatorial powers, and is called the *Graptodera Chalybea* or steel-blue flea-beetle. All however, are not steel-blue, for some are of a brownish tinge, and many of a beautiful green, violet or purple. But whatever the tint, all have the same brilliant metallic lustre. The most common color is greenish blue above and dark green beneath: the hind thighs are thick and strong; the body of an oblong oval form. Length about 0.16 of an inch.

This beetle issues from the ground during the first warm days in April, and immediately proceeds to attack the vine buds, eating its way to the interior, and devouring the entire center. In May the sexes pair, and the female lays her eggs in the leaves of the vine. When the young are hatched they feed on the upper surface of the leaf, and if very numerous soon devour the soft parts, leaving the leaf an unsightly object, covered with dirty brown blotches. They appear about the middle of May, and soon arrive at their full growth. The color of the full grown larvæ is light brown, with eight rows of black spots above, those of the two dorsal being confluent; head and feet black; antennæ very short. On each of the spots on the back there is a single hair, and from the breathing apertures two. Length about $\frac{3}{8}$ of an inch. There are six true legs and a fleshy anal proleg; the underside of the segments are swollen, giving the appearance of short prolegs. When in motion, it brings its body up with a jerk like that of the caterpillars of the geometer moths. About the first of June it enters the ground and changes to a pupa, emerging in from 14 to 16 days, as a perfect insect. There are several broods in the season.

The grape vine flea-beetle being a near relative of the dreaded turnip-fly—*Hatica nemorum*—has nearly the same habits, with the difference of food. It is equally difficult to capture when in the perfect state, although much may be done during cool weather, even at that period of their existence, to thin their numbers by careful hand picking. The larvæs are rather tenacious of life, and will live through a hard course of treatment. When not numerous, the most certain method of shortening their days is to pick off the infested leaves and burn them, but this cannot be done when very numerous. I do not know any application not injurious to the vine, that can be easily applied and will kill the larvæ, but would recommend syringing with lime or very strong soap-suds—that made from whale oil soap is the best; dusting newly air-slaked lime on the leaves when *dry*, will probably have a good effect. All these means are worth trying.

He who knows his ignorance is the possessor of the rarest kind of valuable knowledge.

Peace is the evening star of the soul as virtue is its sun; and the two are never far apart.

The Orchard.

An Essay on Orchards.

BY DR. J. A. KENNICOTT.

POSITION, ASPECT, ETC.

Other things being equal, ALTITUDE is a prime consideration in the selection of orchard sites. The more elevated, the better; anywhere in Illinois, and also the adjoining States. For grapes and peaches, especially, comparative elevation of site seems to be almost a necessity. The reasons are pretty well known—but I will not pause to explain. ASPECT is of less general moment. The grape requires abundance of sun, and a free circulation of air, and should have a southerly exposure — south, or southeast, best. For the larger fruits, I would not mind aspect so much — studying only to place each sort where it will get sun enough, and not too much of it; and where most likely to escape the effects of late spring frosts. Hence, the peach, and others that blossom early, should have the northwest and west; and the raspberry and currant—both impatient of sun—should share the north side of your slopes, and fences.

SELECTION OF TREES AND SHRUBS.

Where we, of Northern Illinois, especially, have suffered, nearly as much as from unfit soil, is in unsuited varieties, of the larger fruits. I say unsuited — because some few of them may yet be found suitable, when we know their wants better, and have adapted our soil and culture to their wants. But now, and heretofore, it is very certain that many, if not most of the lauded sorts east, have failed altogether, or given but little satisfaction in the prairies of the northwest. Here, no man can give particular and definite directions; because a sort that fails in Cook county, may do reasonably well in Whiteside or Rock Island; and very often, a sort well suited to Union, will prove of little account in McHenry county. And to some extent, like facts obtain in even adjoining counties; or on the same parallels, within fifty miles. Diversity of soil has much to do with particular cases; but the greater diversity of CLIMATE—between the far east, and our prairie land of the northwest—especially extremes of heat and drought, and sudden alternations of temperature—is, doubtless, the principal reason why so many excellent varieties fail with us. But THE FACT is well ascertained, and must govern us, at present; in the selection of varieties of fruits, and the positive rejection of most eastern testimony in regard to sorts, which have not been *proved* good in Illinois. All I dare venture to advise in regard to varieties, is this: Learn what sorts have done well for a series of years past, *in your own neighborhood*, and on soil like your own; and plant mostly such sorts—provided the fruit suits your market and your own wants. In the Transactions of our State Horticultural Society, printed herewith, you will find lists of fruits to guide your choice, fully as reliable, perhaps, as any I could give you, and for a much wider range than I should be justified, from personal experience, in venturing upon. If you are an amateur, or more careless for failures than experiment and a great variety, then plant as many sorts as you please. But if you go in for profit and reasonable security, twelve to twenty varieties of the peach, (where it will give fruit,) and same of the apple; and half as many pears and plums, and about the same number of the hardy Duke and Morello cherries, and as many "small fruits" as you can gather and dispose of, will be enough, and it may be none too many. For market purposes, three good sorts, ripening nearly together, will be better than more. Many sorts make much trouble; and mixed ones don't sell well.

Of the Heart and Bigarreau cherries, you need not plant at all, unless on hardy stocks; and even then they will often disappoint you if you let the sun shine on one foot of stem.

The apricot and nectarine must have a climate that will insure peaches, and a soil fit for grapes.

The quince is of little account, except in stiff clay, retaining moisture well, and yet never wet.

All the small fruits do well everywhere, north; and, perhaps, all but the currant, south.

GRAPES are our best fruit, in my estimation, and they have a wide range. Here I may venture on recommending the CONCORD and DELAWARE as perfectly hardy and good, everywhere in the west, north and south, and if you will lay down the vine, in autumn, and cover it with a little dry earth, almost *every sort that will ripen its fruit* in your climate, will do well enough in the right place. And this holds good with other excellent fruits. You cannot grow those perhaps best of all raspberries —Brinkle's Orange, Hudson River Antwerp, &c.,—without such protection. And

they are worth it, Brinckle's Orange, certainly. There is one entirely hardy grape, good for wine, and good to eat when fully matured, that is too much overlooked—the Clinton. And I should like to see the "SUMMER GRAPE" of Greene county—that from which H. L. Brush of Ottawa, and others, make such wholesome and good imitation "Port" (and "Claret?") tried in cultivation. The wine from it has a decided "character;" and for medicinal purposes is unsurpassed by *any* foreign wine, attainable at a cost that will warrant use. Who will get seedlings and crosses from this vine? He is very like to prove a public benefactor who does it. Will not Mr. Brush or some one else who knows all about it, give us a chapter on this vine, and the WINE made from it?

For South Illinois—on the hill sides, especially—I am inclined to say, with Dr. Warder, that the best grape is "the Catawba, every time." But it seldom ripens here, and the vine is very tender too. Of the other fashionable sorts, I cannot speak from experience. The old Isabella does pretty well down south, and occasionally gets ripe here, but the vine must be protected, and I think the Concord is bound to supercede it.

AGE, SIZE, AND SHAPE OF TREES, ETC.

A *peach* tree should never be over one year from bud; and, perhaps, better "in the bud," for orchard planting. Where the nursery growth is large, *apples* will do, at two years from bud; and, now and then, the same age from root-graft; though three, and four year old possess some advantages, in ordinary cultivation. Dwarf trees, unless carefully shaped in the nursery, should not exceed two years—and perhaps one year old—"maiden trees"—would be best, in the hands of every planter capable of shaping their growth. Plums and cherries may be of any age, under four years; standard pears the same as apples, and grapes, currants, &c., never over two year old, and better if only one. And *size* should always correspond with age. The worst specimen of any sort, is that which is overgrown. The "handsomest and thriftiest" tree, in the estimation of most purchasers, is just the most unsafe specimen, of any sort he could possibly select. If pampered in the nursery, YOU must pamper it in orchard; and the greater, and later the growth, the more the danger from winter, and the later your prospect for fruit.

In shape—form—get LOW HEADS, always; there is no exception to this rule; though many sorts are little inclined to form low heads, without help. And you must help them. *Cut them back*, when the nurseryman has neglected it.

Pears and cherries, whether "dwarfs" or "standards," must be *made* to take on limbs, FROM THE GROUND UP. They should be "pyramids based on earth," or they will be so much "blighted" and dead wood, before you can eat much fruit from them.

Plant "dwarf," or dwarfed, low-headed cherries, only; plant "dwarf apples," in garden only; they do not pay, in field culture. Plant dwarf pears as you please. Some varieties are better, on the quince—and many of them pay well; but, as a rule, standards pay better—I mean pear on pear stocks. Dwarf trees require as much care and nourishing, as fancy stock. They will not bear negtect, nor abstinence. Never take a forked tree; and never be afraid of a crooked one. A crook, set to the wind, may be an advantage; and time soon cures the deformity. And, please bear in mind, that unshapeliness is the normal habit of some varieties, while young.

Never plant seedlings, if you can get any good worked sort. Seedlings do not pay. Budded trees are, in my opinion, better than root-grafts—a few sorts, possibly, excepted.

Never buy trees of a pedler. You must, of necessity, get cheated, or cheat yourself, in either price or quality, in three out of every four cases. Not one, out of a hundred healthy trees, should fail to grow, if well planted. And yet, half that are planted do fail! Your peddler, and your half-bred tree-maker—and your own adherence to old whims, and persistence in the notion that a tree is as tenacious of life as a purslain—one, or all—are at the boftom of these losses.

Buy your trees of the regular, EDUCATED NURSERYMAN near you, or order them from a distant one in whom you have confidence; and in every case, order the *roots to be sent* with the trees, and sent *alive!* Have your trees WELL "PACKED," *and* PAY WELL FOR IT, and you will *get them alive.*

The top will take care of its own vitality, if the roots are safe; and it is safer to send *well packed* trees two thousand miles, and have them three weeks in the package, than to transport them five miles, with the roots naked; and then keep them twenty-four hours out of the ground, as half of you do. There *are* trees, that half an hour's exposure of naked root, is as sure to kill, as the same time in a good fire. Some PINES, and

other evergreens, for example, will not stand fifteen minutes' exposure of naked root; and yet, we import them from Europe, and have them months on the way.

Neither freezing, nor yet, considerable drying, need be fatal to trees in the package, if well packed. When frozen, thaw them out gradually, without breaking bulk, in a cellar, or buried in earth. If received dry, wet them well, and instantly bury, root and branch, in mellow soil—and leave them there till the buds swell, almost to bursting—or quite—and root and top look plump and fresh again. Then use the knife freely, in removing dead root, and reducing living top to correspond—puddle and plant, during a wet or cloudy day, or at evening—*mulch*, and, it you can, give shade to the top, during the day—and your trees may do pretty well, after all. I have received trees late in December, hard frozen; and late in May—from France and Belgium—dry enough to burn! and yet saved all the former, and a good share of the latter. But trees dried or frozen, *naked*, and then planted haphazard, might much better be burnt at once, and save the expense of planting.

The cheapest preservative of the roots of trees while out of the ground, is a "puddle," or mortar of clay; the best, and safest, is clay and swamp moss; and in both cases, reasonably close packed, in box or bale.

For the Ohio Cultivator.

Sugar Cane Culture.

There is an unusual degree of interest manifested among farmers in procuring the best available sugar cane seed for their next planting. This interest does not come too soon, for it is pretty generally known, that after a few years planting from the same seed, its hybridizing nature renders the stalks nearly worthless for making sugar or syrup. Hence we see the absolute necessity of keeping the seed pure, to insure a good yield of juice. The yellow seed, I think, is much better than the brown, in many respects. It is earlier, will produce more per acre, and the syrup is much lighter in color.

In planting either kind, plant in hot beds by all means. By so doing the crop will be two weeks earlier; and besides this, setting the plants in fresh plowed ground, gives them a start of grass and weeds. But if the plants are not thus set out, the seed should be sprouted previous to planting. This may be done by pouring boiling water over them.

In planting, have at least six small stalks, if possible, in a hill, and the rows sufficiently close to suit the quality of the soil. By thus doing we prevent the appearance of succors, and obtain much more saccharine matter; each main stalk reserving to itself, what otherwise would go to rear useless branches or succors, all to be supplied with but a single set of roots.

It is said that steaming the stalks before grinding, is a great advantage in extracting the juice, giving a greater quantity, and rendering the mill less liable to damages.

As to the boiling, boil rapidly in a shallow pan to a good syrup, then slowly to a thick syrup, cool quickly and stir rapidly until cool, (stirring makes it a light golden color) and I will ensure success.

Ashley, March, 1862. J. B. Dague.

California Farming and Stock Raising.

I had expected to furnish your readers the unvarnished history of stock growing and agriculture in California, but my time has been engaged that I have not been able to do so; in fact, little can be said of a flattering nature, and it is an unpleasant task to write facts where they do not accord with statements of others, and when I know I am stating what every Californian will condemn me for. They act on the supposition that "truth should not at all times be spoken," and as they do not want one word uttered that would discourage emigration. With one voice they are loud in extolling the beauty of country, climate, soil and stock of their new home, and whilst I can discover there is a smothered disposition to escape to the States, they claim for that state all that heart could wish. Still duty compels me to present the facts.

When we contemplate the advantages for farming, in comparison with Ohio, the latter is far in advance, and always will be.—The grass in California begins to start from the first to the last of January, growing very luxuriantly and rapidly while under the influence of Spring rains, and until the first of April, at which time it ceases to grow, and turns into a dry hay; thus it remains for three months. On the mountains and foot hills it is very sweet, and is called bunch grass, and never springs from the

root, but always from the seed, excepting in the valleys, where there is a very slight depth of soil. And should the grass be cut before it has shed its seed, for three or four years there must be a very spare supply, for as soon as the sun strikes the earth, after the spring rains are over, the roots are burned and destroyed, and all that is left is the seed to spring forth another year.—There is much nutriment in the grass while standing for three months after it ceases to grow, though for two months while growing, cattle and sheep have become like grain-fed, fat, and on the dry grass they hold their flesh, so that until the first of August they are fit for the butcher and table, and from the first of November they become reduced exceedingly low in flesh. From November to the first of January they have nothing to do but to struggle with hunger and starvation. During these three months twenty per cent. of the stock is lost. This statement is for the usual seasons, and is derived from old settlers.

I may be allowed to state what I have seen during my journey here. Hundreds if not thousands of cattle, I have seen floating down the Sacramento River: while passing them huddled together on some dry hill, I have seen them, ten at one time, fall and expire. It is said they died from being chilled to death. I am free to admit that the cold rains are destructive to cattle. I know, though, they would stand any weather I have seen, provided they were not previously starved. The few cattle which looked as though they might live, looked harder than any stock I ever before witnessed in my travels. Over the bodies of many were putrid running sores. Many times I have attempted to eat the meat on the table, but could not, and have not to any extent, since leaving San Francisco, where I had at the International Hotel, the best of beef and mutton. Never have I been so sick of any sight in the stock line as in seeing the cattle of California dragging themselves round. It is cruel. From what I have seen I may conclude they must have fallen in vast numbers before the freezing blasts and storms, against which no shelter is provided.

I have in former letters said all I dared to, though not all the truth, of the depravity of Californians. I see in this picture before me, as well as all other branches, that men will degrade themselves in not providing shelter and food for their stock. I see too, that men have the impression that all which is required is to procure the largest number possible, and that necessary food grows spontaneously. This is not true.—No stock can be taken through the winter with safety short of three months feeding in any part of this State. Sheep north of San Francisco will require food for four months, if healthy wool or good mutton is desirable.

Traveling here satisfies one that "it's not all gold that glitters," and that "distance lends enchantment to the view." It has been claimed for this State that it must far excel Australia as a wool growing country. It shows what is true, that many become infatuated with new things. Western Texas is far in advance of California as a wool-growing State. Either are too much subject to coast storms to allow sheep to range with safety without shelter. Wool growing, to prove successful in California, must be conducted on another system than the present. They must provide shelter during the cold storms, and prepare food for winter months. As California will not be likely to do this, we may safely conclude that the large quanties of wool, which were expected from the Western Coast, will not be produced. Sheep growing has been prosecuted, thus far, with reference to mutton exclusively. Few fine wool sheep are scattered through the Siate. Many crosses have been made with the old Mexican or Spanish sheep. Stock growers would derive great advantage if they were to pay more attention to wool growing. Mutton sheep are now cheaper than in the States, and farmers are discouraged with the small returns they are receiving. This remark may apply with equal force to every description of stock growing, with the exception of the best class of road horses, which still bring a large price. The number of sheep in this State is nearly 1,000,000, producing 4,000,000 pounds of washed wool. The fleeces are very light when washed.—Like cattle, sheep do well on the mountain or bunch grass, while it is tender or green; but it will require a large extent of territory to pasture one thousand sheep, as they destroy it so effectually that it prevents the grass from taking seed for another year, leaving the mountains unproductive. This will form one of the great drawbacks of wool growing; in addition to which, the climate is changeable. The summer months are warm, producing light fleeces. During the winter, rain storms are prevalent; although the weather is extremely warm on the foot hills and valleys (compared to that on the high mountains) sheep become chilled, diseased and expire, along the Coast Range, with the attention they now receive.

Editor's Table.

S. D. HARRIS, . . . EDITOR.

Cultivation of Chinese Sugar Cane.

We promised to give the *Cultivator* readers a chapter on the culture of Sorghum; since that promise was made, several very successful cultivators have given their experience to the public through our columns, which is better than any thing we could say; but to keep the subject fresh in mind we will make a brief statement of what has been learned in the business. We will speak of the cultivation now, and before the time for working up, will collect and publish the best information on that subject.

SELECTION OF GROUND.

The kind of soil best adapted for the Chinese Sugar Cane is a warm, underdrained clay loam, or limestone clay, with a loamy preponderence and well dashed with lime. This latter ingredient is necessary to counteract the excess of acid in the cane. For the same reason, a black bottom land soil, is the least adapted to growing a rich cane, though it will produce a great growth of watery stalks, in which the juice will be extra charged with the peculiar acid of this cane.

A rich sandy loam is quite as good for the richness of the cane, though the growth of the stalks would be less; even a tolerably fertile sandy soil will produce a more profitable crop than a black sour bottom. A warm chocolate colored second bottom—such as would be right for sweet potatoes—will yield a large growth of cane, and a tolerably good quality of juice for syrup.

TILTH AND MANURE.

Whatever the soil chosen for a field of this cane, it should be in good heart and not need a heavy dressing of long manure or fresh stable manure, as this would induce the very trouble we wish to avoid, viz: the acidity of the cane. If any manure is needed it should only be a well rotted compost, thoroughly worked in the soil. A compost well charged with super-phosphate of lime would be a good preparation for this crop. The ground should have been deeply plowed in the fall, but if this was not done, it is not best to make a very deep plowing in the spring, unless the soil is particularly fertile at the bottom of the furrow, as this cane is a shallow grower, and its roots seek their nutriment along the warm surface soil. For this reason the surface should be very finely pulverized, and more particularly as the earlier growth of the plants is very feeble.

PREPARATION OF THE SEED.

The seed should be short, fat, glistening black and cracked open at the tip, showing the pinky color of the inner coat. Seeds which are longish, dull black or brown and close at the tip, are either degenerated, hybridized with broom corn, or are unripe. As in all plants, some seeds will produce better stalks than others, so it is with the cane; and as in gathering the seed the whole head is taken, there will of necessity be a considerable portion of the seed unfit for growth. By pouring the seed into water, the very best seeds will sink and the lighter will float and may be taken off; but some pretty good seeds will not sink till after having been in water several hours. There will be other unhealthy seeds which can only be got rid of by the process of thinning out after the plants begin to show their character in the field. If the seed was all good and equally good, and the planter had time to be particular in his planting, one quart of seed would be enough for an acre of land; but as the above conditions are not often present, it is better to put in two quarts or more, and pull out the sickly and superfluous plants in the time of hoeing.

In consequence of the hard shell of the seed, if put into the ground dry, it is a long time in getting moist enough to sprout. It should always be helped to break its coat by a previous soaking of some sort. The most expeditious method is to put the seed in a basket, drench it with cold water, and when this has been drained off, pour hot water slowly over it, till it is well warmed up; then cover the basket with a coat of papers or a wet cloth of several thicknesses. and let it stand in a warm place for several hours or over night; then roll in plaster if it can be had, or if this is not convenient dry the seed for handling by rolling it in fine road dust, but do not expose it to dry in the sun.—Nothing else is so good as ground plaster, as that will closely embrace the seed and form a manure for the first tender rootlets which put forth, before they can take hold of the soil.

LAYING OUT AND PLANTING.

The time for planting is always when the ground is warm enough for the seeds to germinate and grow right along. This seldom occurs till the second or third week in May, in the latitude of Central Ohio and northward. We would not trust the seed in the ground before the tenth of May, without an unusual promise of settled warm weather before that time. It makes all the difference in the world with the little baby plants whether they come out in a genial air or a discouraging cold drizzle. By having the ground well worked and the seeds well prepared, the cane plants will go along so as not to be choked with the second growth of weeds, or checked by a crust from a beating storm.

Having the field all harrowed fine and level, mark out the rows north and south, four feet apart, and not over two inches deep, then immediately drop in the seed so as to secure a stand every eighteen inches or two feet; it will grow well with a stalk every foot in the row.

STARTING IN A HOT-BED.

This cane bears transplanting very well, and for several reasons it is often best to start the seed in a hot bed and then transplant to the field row. With large planters who are short of help, this would be thought impracticable, but for small lots and where the help could be had it would be of advantage in getting an early start for the cane, and while the cane was growing in the hot-bed, the field could be under treatment for the destruction of the first growth of weeds, as well as for getting it in fine tilth.

CULTIVATION.

Keep the surface mellow about the plants: keep out weeks and thin out or fill up by transplanting, as need may require. When the plants take a decided upward growth, turn a light furrow towards the rows, which will check suckers and form a good base for the crown of the roots. Let all after cultivation be shallow and often; so as not to break up the roots, while it keeps the surface free of crust and weeds.

These are a few hints of what has been learned of the progress of Sorghum culture; if any person knows a better way let them tell it out.

IMPORTED SUGAR CANE SEED.—We have received the invoice of our imported Sorghum seed from France, and the price is more than we expected. It cost $10 a bushel from the ship. This, with the express charges from New York here, and the cost of sacks, will oblige us to sell as follows: For a bushel $12, half bushels and pecks in same proportions, when called for, or to go by express at purchasers' cost for expressage. By mail, post paid, 75 cents a quart. We have still a small lot of good southern grown seed at 15 cents a quart, or by mail, post paid, 35 cents a quart.

FINANCIAL.

The new demand treasury notes have made their appearance, and the old ones will soon begin to disappear from general circulation, for two reasons: the government will cease paying them out and cancel them as fast as received, speculators will hoard them, and banks and bankers will hold them as their reserve, selling them as fast only as their or the public's needs may require. Being receivable for duties on imports, (while the new ones are not,) they will rank in the market nearly the same as gold, and therefore command a relative premium. They thus become a sort of merchandise, and the new demand notes take their place on the standard.

In stocks, the favorites are the 7 3-10 three year treasury notes, which command par and the accrued interest. These notes are a fine investment, paying as they do a high rate of interest, and being exempt from taxation. They are also convenient to handle, having the interest as it were calculated upon the face of them.

Exchange is abundant and the rates are par buying and ¼ to ⅜ premium selling—the latter being the general figure. In some instances demand notes are sent forward to make exchange, but they are few.

Much inconvenience has been experienced lately from the great scarcity of small bills in the state, and to many it is a matter of great wonder to know what has become of them.—We would say to all such that they have been sent south and east, mostly by the sutlers, to make change in the army, and to supply the home demand.

Wool Sale in Boston.

At Boston, Thursday, April 10, the auction sale of 600,000 pounds of wool was well attended and higher prices realized than expected by purchasers. Before the sale there was a disposition to bear prices, but toward the middle the auctioneer rallied upon bidders and the sale closed at firm prices, ranging from 43 to 48 cents, average 45 cents for Ohio and Pennsylvania fleece and extra Washington County fleece. The principal purchasers out of this market were Messrs. Bullock & Son's, of Philadelphia, Robinson & Co., of Philadelphia, C. Luling, J. Ripley, Van Blarcomb & Co., of New York. The lots were all taken, without reserve, by bona fide bidders. The wool was purchased in Pennsylvania and Ohio, by

G. W. Bond & Co., who acted as agents for several capitalists, without regard to price. The sale was satisfactory to both holders and purchasers.

The Farm.

For the Ohio Cultivator

Culture of the Potato.

As the time is now at hand for planting this vegetable, perhaps a few suggestions may be profitable to your readers.

The best soil for the potato, is a tolerably light, dark colored loam, if full of decayed vegetable matter all the better; provided always it be made sufficiently dry; that is to say—so well drained that the water line shall not be nearer the surface than from 20 to 24 inches. Potatoes will not grow and be healthy in wet land.

The best variety for this locality is unquestionably the Neshanoc. It does not yield, however, as large crops as many other kinds, but upon the whole I much prefer it.

The ground should be made mellow before planting: I have yet to see a good crop or even good potatoes grown among clods. Early planting too, is one main item of success. It gives the chances of the whole season. The tubers are also much better also when thoroughly ripe. The Neshanoc while green, is pretty well mixed through the inside with blue streaks, which almost wholly disappear as they become ripe.

Some persons plant their potatoes in drills. I have had the best success in making rows both ways; they yield about as many bushels, and everything else being equal, incomparably finer specimens. I seldom fail in having ninety per cent of my entire crop large enough for table use.

In preparing the seed, I prefer having them cut quite small, or so as to have as near as may be, but one eye in each piece; we then plant three of these pieces to the hill, which with Neshanocs, will be apt to give from four to five stalks in each hill, which is enough when good potatoes are desired. I have time and again tried the experiment of planting whole potatoes, from one to two to the hill, according to size: where you only put one, the stalks are too close together, if not also too many; where you put two in each hill, you are sure to have too many stalks. They produce generally three or four large, rather rough potatoes, with any quantity of small ones; while those cut with only one eye to the piece, and planted as above, have generally, for me, in good ground and with good culture, produced from eight to twelve nice smooth potatoes to the hill, with very few small ones. Last year I planted some five acres with large whole potatoes, which at digging time gave about 30 per cent of small ones, unfit for market as table potatoes; while right by their side, on the same kind of soil, planted the same day, and in all respects cultivated alike, the fine cut did not give over 10 per cent of cullings.

Some people plant only when the moon is right, late or early, so that when they fail of getting them in, in just the time when the moon is in some constellation, they wait for another revolution of that luminary, which if it was endowed with reason and could laugh, would certainly do so at their folly. Plant early with the ground in good order, cultivate well so the crop may mature before the fall rains set in, then harvest in good season, and nine times out of ten you will have a fair crop of good potatoes: I am not afraid to warrant it.

G. S. Innis.

Columbus, April 19th, 1862.

☞ The above, coming from a most successful Market Gardener as well as capital farmer, is worthy of particular attention.—Ed. *Field Notes.*

Raising Poultry as a Business.

Can this be done, and done profitably, inside of city limits? This is the question of a female friend, "in want of something to do to aid in the support of her family." She says:

"Would it be proper for a woman to establish a henery anywhere on the face of the earth, and would it be profitable in the small city where I live? My friends (?) assure me that it would be exceedingly improper and indelicate for me or any other *woman* to enter into anything of the kind;

they say, 'all the town will laugh at you.' But if this is the only objection I can manage that."

Unfortunately, that is not the only objection. The grand objection is that it don't pay, as a general thing. That this is so, is proved more to our satisfaction than in any other way, by the fact that almost every one who has started the business has given it up after years of trial. The most successful poultry manufacturers that we know of in the United States, are the Messrs. Beatty of Aurora, N. Y., but they are not strictly manufacturers, but finishers. They buy the manufactured article and finish it off ready for market, by careful feeding and neat cleaning and packing. This they do profitably to an immense extent. But we do not know of a great poultry manufactory anywhere in this country, and do not believe one can be established within the limits of a town that will be profitable, because the birds are not healthy in a state of confinement.

Poultry raising, and the production of silk, belong to the families of farmers, by right, and never can be taken from them. Neither can be manufactured on a large scale; both belong to the country. Poultry raising; as practised by the females of some farmers' families, is a delightful rural employment, and is sometimes profitable. It is much more often a bill of expense, so far as it relates to direct profit. But it is very profitable to keep poultry on a farm, on account of the aid the birds are in destroying insects. In some cases, keeping poultry is profitable, mainly in the value of the manure.

Our correspondent inquires if there is not some particular breed of fowls that will produce a sort of "golden plumage" profit?

That breed sickened in the hight of "the hen fever," and is now nearly extinct. The hens that "lay two eggs a day" always cost as much as the eggs come to, and a little more. If our fair friend still desires to establish a city poultry market, we advise her to confine her efforts entirely to ducks, and never let them see water enough to swim in. Set the water for them to drink where the young can only get their heads in. Water is for country ducks; city ducks can do without it.

In conclusion, we doubt the chance of our fair friend to make a henery profitable, though eminently proper.—*N. Y. Tribune.*

The best sometimes err, and still remain the best; while the worst do well at times, yet still remain the worst.

The Orchard.

For the Ohio Cultivator.

A Tree-Piercing Insect.

Inclosed you will find a a section of the limb of a young pear tree, that was stung by some insect the latter part of August or the first of September last, and some of the marks were made the year before, and very nearly kills the tree. The eggs or grub is still in the limb. It does not attack the present year's growth; it is nearly as bad on some apple trees as on the pear, and I have seen their marks on the quince and crab apple. J. M. PRICE.

Mercer Co, April 1862.

NOTE.—The above specimen branch was evidently punctured by an insect of the locust species, though smaller than the common locust. The larva are still in the wood. The destruction of the tree is caused by these larva sucking up the return sap as it passes back under the bark of the tree, thus leaving the branch to shrivel and die, instead of assisting it to grow by the enamel deposit from healthy sap.

We would be glad to receive a specimen of the perfect insect when it comes out and attains its growth. Probably it takes a turn in the ground like the locust, for a year or more before assuming its perfect insect form for further depredations.—ED.

Scale Insect on Apple Trees.—Enclosed is a section of an apple tree limb, which seems to bear the marks of some kind of a destroyer. The tree from which it was cut, is three or four years old, set two years ago. It made scarcely any growth last year; I have about 500 out, but saw no others affected like this. I had not discovered this till last week. Perhaps you can give some information as to cause or remedy, or both.

E. D. JOHNSON.

Tyler Co., Va., April 1862.

NOTE.—The pest upon the section of apple tree branch sent us above, is a species of the scale insect or coccus, and the best means for its destruction are to cut off and burn any branches or trees wich it infests. Where they are few, or upon a favorite tree, they may be destroyed by thoroughly scrubbing with an alkaline wash and scrubbing brush. This insect is protected during winter by a little web which looks like a

speck of mildew. It is not the worst form of the scale insect, such as has been so troublesome in Ill. for a few years past.—Ed.

Transplanting in the Night.

A friend in whose powers of observation we have confidence, and who is an exact experimenter, informs us that last spring and summer he made the following experiments: He transplanted ten cherry trees while in blossom, commencing at four o'clock in the afternoon and transplanting one each hour, until one in the morning. Those transplanted during daylight shed their blossoms, producing little or no fruit, while those planted during the darker portions maintained their condition fully. He did the same with ten dwarf pear trees after the fruit was one-third grwn. Those transplanted during the day shed their fruit; those transplanted during the night perfected their crop and showed no injury from having been removed. With each of these trees he removed some earth with the roots.

We are well aware that when plants are accidentally frozen in green-houses it is customary to render the house dark before applying cold water to thaw them; and that when this is not observed they are injured, while if entire darkness be secured during the operation, many of them are saved.—But the experiment of our friend seems to have but little analogy to this fact and is entirely new to us.

We shall be glad to receive information on this subject from our readers, and hope that numerous kindred experiments will be made during the coming season.—*Working Farmer.*

Planting in the Moon.—The above little scrap reminds me of a fireside chat held yesterday in the parlor of a wise Dr. who is a greet believer in modern Spiritualism.

"What do you think, aunty," said the pretty Philadelphia lady, "what do you think about the planting potatoes in the moon?"

"Well I think there is something in it; indeed I know there is;" answered Aunt F.

"Oh, fie!" exclaimed Farmer B., "I would rather have my potatoes planted in a good piece of well-spaded, well manured land, than upon any moon of my acquaintance."

"True, true," said the old lady, "but still I insist that the moon makes a difference."

"Which time in the moon would you plant them?" asked the Dr.—his whole phiz in a twinkle of derision.

Aunty was confused, and declared that just at that moment she did not know, but asserted she did believe, because all the best gardeners—

Here Farmer B. and the Dr. and all the ladies burst into a loud laugh at the old lady's expense. Farmer B. told the story of the old woman's (it's always an old woman you know,) lump of indigo, and the Dr. laid his fingers with a professional flourish upon Aunty's wrist, beginning to talk his big words that no one understood but himself. Whereupon Aunty patted him upon the shoulder and "thought a man who endorsed table tipping and who had been rapped on the head by the bones of dissected subjects, without visible agencies, might give credence to the idea that the magnificent moon could help the growth of a turnip or potato."

All the ladies were with aunty, and the learned Dr. suddenly remembered he needed a clean shirt before dinner, and left; and another hearty laugh ended the chat upon the power of light and dark upon vegetation.

If the effect of light is so powerful for evil in transplanting trees, may it not be equally powerful over the growth of minor things? Let us have some new light upon this subject, and if there really be no light, let us have the darkness made visible, on that point as upon others. F. D. G.

Flax Chaff.—I would like some of your numerous readers to inform me whether flax chaff is good for feed or not. I blew out a pile in my barn last fall, supposing it good for little or nothing, but this winter, I gave, for an experiment, a large basket full each to three cows, twice a day, stirring a little brine in it to make them eat it, and also a little corn to each cow. They gave an unusual amount of milk, which very materially failed when the chaff was out, though its place was supplied by fodder and about the same amount of corn continued. This is an experience with me and I would like to know the experience of others. C. A. C.

Field Intelligence.

Prussian Ag'l Societies, Reports, Etc.

European Correspondence of the Ohio State Board of Agriculture—Letter from Mr. Platho, of Berlin.

Translated from the German by JOHN H. KLIPPART.

JOHN H. KLIPPART, *Corresponding Sec'y O. S. B. of Agriculture:*

DEAR SIR:—Your letter dated July 10th, 1861, and addressed to the Honorable N. B. JUDD, U. S. Minister to Prussia, was placed in my hands some time since. From this letter from your Excellency it appears that the State Board of Agriculture is desirous of obtaining either by exchange or purchase:

1st. Publications of Agricultural Statistics, of Germany in general, and of Prussia in particular.

2d. Colored engravings of our most esteemed races of domestic animals, as horses, cattle, sheep and swine.

3d. Publications and Reports respecting the organization, supervision, experiments and results of Agricultural Academies, and experimental or model farms.

4th. Agricultural almanacs.

5th. Annuals of agriculture.

6th. A treatise which is clear, and giving all the details of the manufacture of sugar from beets.

7th. An exchange of Seeds.

We cannot do more than comply in a partial manner only, with these requests.

In answer to the first request, I can only say that, at present there are 408 Agricultural Societies, which consist of 597 honorary, 115 corresponding and 39,851 actual members. These societies are located as follows:

Prussia proper	95
Posen	23
Pomerania	30
Brandenburg	44
Silesia	54
Saxony	61
Westphalia	43
Rhine Provinces	53
Hohenzollern	5

The societies have an aggregate capital of about $56,000, Prussian Thalers [$37,333] but there is an additional fund annually appropriated from the State. Notwithstanding the State support, the societies find themselves with a very limited amount only for premiums, reports, publications, distributions and exchanges. You will be able to judge from this, that the means at the command of the societies is much less than that enjoyed by similar organizations in America.

Furthermore, these societies are isolated from each other, whilst in America they appear to be in intimate relations with each other. The greater portion of these societies that publish anything, publish annual reports only, few publish quarterly, and a still smaller number publish brief monthly reports of their transactions.

In answer to the second proposition or that relating to an exchange of Seeds and Reports, I regret to state that to me it appears to be impracticable, for the reason that the publications of each society are distributed to its members only; therefore if the State Board of Agriculture is desirous to obtain these publications, the only manner in which it can be accomplished is to have the State Board become a member of and correspond with each and every one of these societies—as a matter of course you will at once perceive that such a course would be impracticable, or at least attended with more and greater inconveniences, than your Board would care about subjecting itself to.

But in order to place at the command of your Board all the advantages which the circumstances will admit of, allow me to suggest, that the Honorable State Board of Ohio becomes a member of the "PRUSSIAN SOCIETY OF ACCLIMATIZATION" located in this City [Berlin]. This society is a kind of Central Agricultural Society, and to which many of the other societies belong as members. The object of the society is to import and acclimate exotic plants and animals. The annual cost of membership, is *four* Prussian Thalers [about $2.75]. This is the only society which distribntes

gratis quarterly reports, new seeds, etc., to foreign members. It also exchanges seeds. The writer of this is a member of this society and will take pleasure in seeing to it, that the Ohio State Board shall at the proper season be furnished with seeds in exchange for interesting or new ones from America.

The Agricultural literature of Prussia and of Germany in general is rich and extensive; and as the Honorable State Board has seen proper to leave the matter optional either to purchase, or to receive as a donation, I have taken the liberty to purchase a small number of excellent works, which are not expensive and in which nearly all the branches are represented. I have therefore the honor of forwarding to your address the following works, viz:

1st. ANNALS OF AGRICULTURE in the Prussian States, published by the Royal Economic College—the highest Agricultural Board in Prussia. I send also the weekly supplement. This publication contains the most recent and most interesting developments, facts, progress and experiences in the entire circuit of Agriculture, as well as the laws, edicts, ordinances, and statistics. Each volume of this publication is payable in advance at a cost of *four* Prussian Thalers. It will afford me pleasure to forward you regularly the monthly and weekly publications of this series.

2d. HUGEL [Huegel] AND SCHMIDT.—The Stud and model farm of the King of Wurtemberg, with beautiful colored lithographs of the domestic animals on the farm—this is the only work of the kind extant in Germany.

3d. SITTEGAST. — Agriculture of Proskan. This work gives a description of the organization, conduct, experiments and results of the farm, which is a Royal Domain, Aside from the Agricultural Societies there are in Prussia proper *four* Agricultural Academies, beside the Institute at Proskan; the latter establishment has 42 scholars—the one at Eldena has 35, Poppelsdorf 82, Waldan 41. The work I send you is the only one published by any of these Academies.

4th. AGRICULTURAL ALMANACS.—Parts I and II. This work contains briefly all the desired information; it contains a catalogue of the best and standard works on Agriculture, etc., from which you can select such as may be desirable, the price of each work is named in the list.

So far as the manufacture of beet sugar is concerned, I send you not only the most recent but in every respect the best work on the subject; it is complete in every sense, chemical, technical, and theoretical; it is entitled:

5th. WALKHOFF'S PRACTICAL BEET SUGAR MANUFACTURER, full of illustrations and written by one of our best practical and scientific manufacturers.

It may not be improper in this place to present some notes in relation to the history of beet sugar manufacture.

In the year 1747 MARGRAF of Berlin discovered that the juice of the common red beet contained sugar. Some forty years afterward ACHARD in Silesia, established a manufactory for the purpose of making sugar from beets. His success however was not flattering, either in regard to the quantity obtained or the quality of that which he did produce.

During the perfect non-intercourse in consequence of Napoleon's Wars in 1814, a larger per cent. of sugar and of a much better quality was obtained by a shorter process, which in part, consisted in using steam for boiling and motive purposes, and the use of animal charcoal as a purifier. In France the manufactures were protected by a tariff, which enabled the establishments to exist to a much later period.

Owing to the very low prices of almost all the raw Agricultural products, the attention of German farmers was again directed to the manufacture of sugar from the beet. It was about 1830 that the manufactories became permanent and successful establishments in Germany—the first of which was established in Bohemia by Messrs. Winrichs & Kodweiss, two Wurtemburgians. Towards the close of 1830 there were a considerable number of similar establishments erected throughout Germany.

and in which all the improvements up to that time were successfully applied.

The merits of this material progress are due to the intelligent and persevering manufacturers in Saxony—a Prussian province—but more especially to the immediate vicinity of Madgeburg, which by its fortunate quality of soil, the surface of which appears to be the best yet known to grow the beets, and the substrata of the soil consists of an immense deposit of peat, which serves an admirable purpose as fuel. Madgeburg was the chief place where this new branch of industry was established, and up to the present time it has fully maintained its former reputation.

But the rapid developments of industrial resources consequent upon this new discovery, soon occasioned it to be heavily taxed. In 1841 this tax was assessed under the representation that it was simply as an indemnification to the State for previous protection and encouragement, and was therefore placed at six *pfennings* per *cwt.* of beets, in 1844 it was increased to 5¼ Kreuzers—nearly 4 times the previous amount—this condition remained until 1850. During this period of time the manufactories increased from 145 to 185 in number in the territory of the *Zollgebiet.* The quantity of beets manufactured increased from 4,829,754 cwt. to 14,788,794 cwt., and the amount of raw sugar increased from 241,487 to 985,853 cwt.

As the product or manufacture of beet sugar increased, the importation of cane sugar decreased, and in order to secure the fixed amount of revenue from sugars, the duty on beet sugar was doubled, the first tax having been limited to a period of three years. But as there was no reduction in the amount of sugar manufactured, the mannfacturers in 1853 made a new arrangewith the Government, which is in effect as follows, viz: a certain definite amount is to to be raised as the revenue upon sugar, the manufacturers pay a heavier tax if less sugar is imported, but a less sum, when more sugar is imported. The sugar revenue amounting to 60,762 *silbergroshen* per individual in the Zollverein. The tax upon a *cwt.* of beets was therefore fixed at 5 silvergroshen. Should the revenue thus obtained fall short of the required amount, then at the termination of each biennial term the Zollverein have the right to increase the tax 1½ silvergroshen per *cwt.*

Many of the sugar beet manufacturers were of opinion that such an onerous tax would discourage manufacturers, and would in consequence receive such a blow that the business would be discontinued, yet under this very discouraging conduct on the part of the Government, the amount of beets manufactured increased to 21,839,799 cwt. in 1855–6, and in the following year to 27,551,209 cwt. But this increase was rather to be attributed to the failure of crops of cane sugar in the Indies, than to any other circumstances. Speculation as a matter of course had its influence also, as, for instance the refined sugar which in 1840 sold for 16 Prussian Thalers per cwt., reached the extraordinary price of 23 Thalers.

In 1858–9 the amount of beets consumed was more than 36,000,000 cwt., and the sugar manufactured more than 3,000,000 cwt.

The number of manufactories in the Zollverein increased until December 1859, when they numbered 257, but at the end of Aug. 1861 there were only 247 in successful operation. The amount of raw sugar increased from 241,487 to 2,933,484 cwt., and the annual tax thereon has increased from 40,000 to more than 9,000,000 Gulder. The entire tax upon these domestic manufactories from 1840 to 1859 was 45,115,066 Prussian Thalers.

During the years 1858–9 there were the following number of establishments in the Zollverein which consumed the amount of beets in cwts. placed opposite.

State.	No. of Manufac's.	Am't of Beets Cons'd.
Prussia	221	31,600,308
Brandenburg	14	2,023,440
Mecklenburg	6	1,157,915
Bavaria	7	421,780
Saxony	3	136,131
Hanover	2	303,845
Baden	1	798,116
Cur Hessen	1	15,770
Thuringian States	2	211,251
Total Cwt. of Beets		36,668,556

A comparative table of the number of manufactories, and the amount upon which they were taxed is as follows:

Year.	No. of Manufac's.	Cwts. of Taxed Beets.
1853–4	227	18,469,890
1854–5	222	19,188,403
1855–6	216	21,839,799
1856–7	233	27,551,208
1857–8	249	28,915,134
1858–9	257	36,668,557
1859–60	256	34,399,317
1860–1	247	29,354,031

With sentiments of high regard,

Your obedient servant, PLATHO.

Berlin, Prussia, December, 1861.

Miscellaneous.

For the Ohio Cultivator.

Vinegar for Everybody.

I notice in a late number of *Field Notes*, that a correspondent says there is not a barrel of pure cider vinegar in the city of Columbus, but an article composed of whiskey and molasses, or something worse; and then he appeals to the people to plant more orchards, and make their surplus apples into vinegar. I think we would have to wait a long while for vinegar in that way. I think I can propose a way so that everybody can have pure, wholesome vinegar of their own make. I will give you my own experience:

A few years ago I heard people talk about the vinegar plant; I obtained one five years ago, from a lady, who gave me full directions how to manage it; she said it must be changed every month, on Friday after the new moon; that there would then be a new plant formed, which might be separated from the old one; that each plant must be used separate, and each to make one gallon of vinegar every month. I also heard from others many things about the vinegar plant, which I then concluded and am now well satisfied were mere whims; however, I tried my plant, and made my vinegar from it through the summer and fall, but in the winter the jar that it was in got broken, and I did not take any care to save the plant. I examined it then, and had done so before, and became satisfied that it was no more or less than the mother from cider vinegar.

After that I got some vinegar from a grocer, which he said he knew to be pure cider vinegar, and after getting three gallons in a jug at three different times, I found about a table-spoonful of mother in the jug; I put it to about a quart of sweetened water, and put it in a glass jar so that I might witness the operation. It was some time before it began to make any change, but at length it began to enlarge, and in about two months it formed a thick, nice plant or mother on the top, and the vinegar was very sharp. I then put it into a gallon jar, and it kept increasing in size; I then put it into a two gallon jar, and at last I procured a keg, which holds twelve or fourteen gallons, (this about a year after I first commenced;) since it has been in the keg it has done well, and I have changed it but twice in the past year.

Now if anybody wants good clean, wholesome vinegar of their own make, I would advise them to do as I have done: first, get a quantity of mother, and then get a good strong cask that will hold from 5 to 20 gallons or more, take out one head, (if it has two in it,) set it on the end, put in a faucet near the bottom, use clean rain water, make it milk warm, and sweeten it by using one pint of molasses to each gallon of water; put it in the cask, put in the mother, cover it sufficiently to keep out the flies and dirt in the summer.

If you set it where it will get the sun and air, it will make vinegar much quicker. In the winter it is necessary to keep it in a warm cellar, or some place where it will not freeze. After it becomes vinegar, it is not strictly necessary to keep it in a warm place, but while it is making, it will sour much faster if it is kept where it is warm. After it becomes vinegar, you can draw and use as you need, and when it gets low, draw all out and put it in something for present use; empty out the mother and the sediment which will be in the bottom, fill up your cask again and put in the mother.

You should not use too much water at first, until you get plenty of mother, as it will take longer to make vinegar. If you

use more than a pint of molasses to a gallon of water, it will make stronger vinegar, but it will take longer to make. If you use less molasses, it will make quicker but will not be so sharp. This I believe to be the best, cheapest and most wholesome vinegar that can be used; much better than that which is made from whiskey, oil of vitrol, or any poisonous ingredient.

Peru, Ind. AN OLD MAN.

REMARKS.—We can corroborate all our correspondent says, except that we do not believe there is any thing else so good as pure cider or wine for vinegar. Where this cannot be had, a vinegar from sweetened rain water is an admirable substitute. But the vinegar keg should be kept supplied with all the fruits used from time to time in the family, such as dried apples, berry jam, apple skins &c., soaked in clean water, scalded, and rubbed through a seive or colander, than strained through a cloth, and the liquor thus obtained put in the tub to keep up the supply. We tried the Vinegar Plant, so-called, several years ago, and found it just as our correspondent says.—ED FIELD NOTES.

Cheese Tubs—Bottoms Inside Out.

Having probably handled a greater variety of cheese tubs during the last dozen years than most people, my attention has been drawn to the different manner in which they are constructed. Some have very deep creases round the bottom, where the bottom and staves unite, in consequence of the bottom being chamfered at an obtuse angle, while others beveled very obliquely, which materially diminishes the depth of the crease, which is much better, as it enables the tub to be cleaned out without scraping, and as scraping has a tendency to loosen the paint, and if oft repeated, to take it off entirely, and allow the water to enter the grain of the wood endwise, which when it does, it has a tendency to swell the bottom and loosen the paint.

I am well aware that coopers will say that this chamfering of the bottom is necessary to entering the staves, and to retain the strength of the bottom by keeping the underside of the grain uncut. But as I believe what has been done once can be done again, and as I have seen a cheese tub that has been in use over twenty years, and is now sound and good, that had no chamfering at all on the inside of the bottom, but perfectly smooth, with the end grain entirely uncut. Such a tub can be cleaned out with perfect ease; it needs no scraping, no loosing of the paint, nor damaging of the cheese. I think if some cooper would re-introduce tubs and pails as above desired, and advertise them, he would meet with the patronage of all intelligent farmers who might see his advertisment, and want a new tub.

It would be well for all manufacturers of dairy utensils to bear in mind that cleanliness is indispensable in dairying, and to insure cleanliness, it is highly important that all the vessels used in the dairy, should be so constructed as to be easily cleaned.

In conclusion I would say that if the bottoms of cheese tubs were turned inside out, or what is the same thing, chamfered on the outside instead of the inside, it would be a great improvement.

But this must not be done at the expense of weakening the bottom, nor need it to any injurious extent, for by making the grooves in the staves that receives the bottom a little larger, it will make the tub sufficiently strong.—*Dairy Farmer.*

Varnish for Boots and Shoes.

Many people oil and grease, and grease and oil their boots with a view to render them impervious to water, until the oil may be pressed out of the leather. Oil alone, or oil and soft grease is poor stuff to exclude water from passing through the pores of the leather, and if the pores be filled with oil, water will drain the oil through on to one's stockings, making cold and uncomfortable feet.

For a few years past, I have used a kind of leather varnish for excluding moisture from boots and shoes, which is a very valuable article for preserving leather and for excluding moisture. The way to make it: Procure a quart bottle or jug, and put in it a half pound of "gum shellac" or shellac, which may be obtained at the drug store. The shellac should be broken up fine.—Now pour in good alcohol enough to cover it, and place it on a shelf in a warm place, and cork the bottle tight, or the alcohol will soon evaporate. Shake it well several times daily. To this add a piece of gum camphor about as large as a hen's egg, and then add about one ounce of good lamp black, and shake it well. If the alcohol is good, the shellac will all be dissolved in about three days, when it will be ready for use.

Let the bottle be well shaken before using any of it. Should it ever appear to be too thick, add more alcohol; and if too thin, add shellac.

I grease my boots and shoes lightly, when they appear to need it, and then give them a good coat of varnish. Pour out two or three spoonfuls into a little dish, and with a small paint brush varnish the boots. If it is good, it will dry in six minutes; and will literally *wear* off before it can be removed; and it will form a gloss almost equal to patent leather.

The great excellence of it is, it does not strike *into* the leather, so as to render it hard and brittle, but remains on the *surface*, and excludes the water most effectually.

Besides using this varnish for boots for several years past, with good satisfaction, I have used it for varnishing harness, after they had been oiled, for which purpose I always found it a choice article, as it would keep a harness in good condition for a long period of time, when nothing but oil and lamp black wonld black everything that touched it.

Now to have warm feet in cold weather, take care of boots in this way; and just before going out in the cold, remove the stockings and dry the feet and get them warm, and they will remain warm for several hours. It is the moisture on the feet that often makes them very cold.

I frequently, before going to bed, run twenty rods or so, in the cold snow *barefoot*, or pump cold water on my feet, for a minute or so; and I know this to be a good remedy for cold feet.

S. Edwards Todd.

Country Gent.

For the Ohio Cultivator.

The Flowers of Life.

"There's no use of your spending so much time on that flower-bed, Susy. It's time the onions were out, and I want you to do something of some account."

I heard a mother say this to a dutiful daughter, past twenty, the other day, and my heart ached for my sweet friend. Not that onions and carrots are not to be raised, but that the petulant tone of that remark left the inference that all time spent in cultivating the beautiful things of earth was wasted, when vegetables needed attention.

Susy is as industrious a daughter as any mother can claim, but she has a keen perception of and love for the beautiful, that her mother knows nothing of. On another occasion her mother was making arrangements for boarders, Susy asked—"Haven't we work enough now?" "No," replied Mrs. S., "it's no use for two women like us to do so little; we can take two, and that will only make *eight* in the family; *I* always had that many when *I* was at *home*."

"But, mother, you are sick a great deal of the time you know, and then I have all to do," plead Susy.

"Well, I'm going to take them, and it's no difference to you, you can as well do something as to be reading and writing every minute you get."

Poor Susy! She was a schoolmate of mine, and I knew how her heart yearned for the advent of a new order of things, when the cry of the hungry mind for *bread* would not be drowned by the jingle of the almighty Dollar;—when a time for all things, would bring a time for mental accumulation and recreation uppermost on Fortune's wheel. Mrs. S. is a good woman in her way, but money, money, is the one great call that her heart makes day after day, and year after year; and to the supply of that great want, all her energies are directed, to the impoverishing of husband and children of that which is of more value than gold—harmony at home, and fond memories to strengthen them in the great warfare of life.

How many Mrs. S.'s are there—who, though prematurely old, yet persist in their daughter's plodding through life in the same path they have traveled, unmindful of the new demands every year that a progressive people makes, and alike disregarding the fact that a robust and cheerful middle life, and happy old age, are of more value than more of riches than can be enjoyed by the insatiate spirit of avarice?

I commenced to write a little article on flower gardening, but as I have got away from my subject, I will not "lengthen my remarks" much further, but say this: Let every one who loves flowers (and I hope those are few who do not,) find some spare moments for their cultivation, even if some of the more prosy duties of life are undone; for by that companionship life made in a greater degree—life such as it should be,

abounding with purity, sweet thoughts and holy aspirations.

Fill every hour with beauties by the cultivation in every way of the better part of our natures, and vices and selfishness will find no place of admission to the Home Circle.

If thrifty mothers have labors enough to employ most of their daughters' time, give them but an hour after the morning's work, or after tea, for the flowers; help them to select choice varieties, and let them know that you take pleasure in allowing them a share in beautifying the earth.

"Make life beautiful;
For soon enough the mildew's seen,
Though never sought for; half its power
Is gone, if we with warmth and sunshine meet it."

I never pass a yard blooming and carefully kept, or a window with fresh buds visible, but I feel a desire to see the inmates; being assured that one heart, at least, sees more in life than a dreary pilgrimage with but one desire, to end it speedily. I know there is refinement, gentle hearts, true natures that love companionship with goodness and purity wherever there is this sign.

FARMER'S DAUGHTER.

South West, April, 1862.

For the Ohio Cultivator.

North Western Ohio.

Maumee city is situated at the foot of the Maumee Rapids, and the country around it, and at the head of the Lake, is destined to be the best fruit-growing region in Ohio. While I am now writing, a cold east wind chills, and threatens us with frost, while even the peach blossoms, the earliest to come forward, scarcely show signs of life. The forests appear dead as winter. The fields and the gardens are not so far advanced as they were in Columbus the first of April.

The smoothest, thriftiest apple, pear, and quince trees I ever saw, are had on this river. There were apples and pears last year, and they were very good. Mr. Eber Wilson, on an orchard of 150 trees, had over 400 bushels. The Catawba grape ripens here apparently as fully as on Kelly's Island. It never mildews, and never fails; but it gets ripe, and is gone at least two weeks earlier than on the Island. I have been told by a number of the oldest settlers, that apples, quinces and pears never fail in the vicinity of the river. If the impression I have formed of this country touching its adaptedness to fruit, is not a mistaken one, this country offers advantages to the orchard men, that is no where else to be obtained.

Yours truly,

JAS. L. GAGE.

NOTE.—Judge Gage has gone to the Maumee country, to renew an acquaintance formed nearly forty years ago, when,

"Potatoes they grew small,"
(And frogs they grow large)—"On Maumee!"

But forty years have wrought wonders in that region, which is now in a fair way to become the garden and fruit orchard of Ohio.—ED.

For the Ohio Cultivator.

After the State Sorghum Convention.

ED. FIELD NOTES:—The last month or two of the year of 1861 there was circulated in several of the newspapers throughout the State to the growers, manufacturers, etc., of the Sorghum, to meet in Convention at Columbus, Ohio, on the 7th of January, 1862.

Being interested in the culture and manufacture, etc., of the Sorghum myself, I went to Columbus to attend said Convention. Now, Sir, I had supposed that the object of said meeting was, to get the experience and opinion (and I might say, facts) of those attending, as it regards the profit and success of that new product. I found said Convention well attended by the bone and sinew of the State, and would compare favorably for *talent*, with the same number of persons assembled anywhere, but I must say (with all respect for those present) that myself as well as others were wofully disapointed, for instead of the time being taken up by those of experience in the growth, etc., of the *cane*, the most of the time was occupied by the inventors, manufacturers and agents of mills and evaporators, instead of hearing of the advantages of the *Sorghum* to the *country*, the different modes of culture, preparing the cane, the manufacturing of it, etc.,

it was made an advertising medium to deliniate the advantages of certain mills and pans, what a good article they could make from them, how durable they were, how easy they were to tend, how cheap they were, giving prices, etc., etc., all of which had been and could be ascertained by the public without the people from different parts of the State having to make a trip to the capitol for that purpose; to be sure we saw several samples of good syrup, and it would take men of very fine taste and sight to give the preferance; also a few samples of very nice sugar, said to be made from the Sorghum.

But, sirs, there is another branch or feature which I wish to draw attention to. Inasmuch as there were but a few heard from, it was proposed and concluded upon to appoint a committee to get up blanks to distribute through the State, to those that had experience in the growth, etc., of the cane, to be filled by them with such remarks as were applicable on that (I think) valuable product, the Sorghum and Imphee cane; said committee were appointed and said blanks were to be distributed in time to have the results published in a pamphlet form to be circulated through the country by the 1st of March, so that the farmers could have the advantages thereof for the present season. The month of March is now passed and none of said pamphlets in circulation, and the probability is, not like to be, for even said blanks have not found their way in the country. I am satisfied that there has been much anxiety in looking for said publications; I am really sorry and astonished at such apathy manifested in a subject that is of so much vitality to the community at large; I know not where to attach the blame; there may be some person, after reading the above, will be able to give some explanation.

Considerable maple sugar and molasses have been made this season in this county.

The prospect now is for a backward season in getting out a spring crop.

Yours truly,

A. H. WRENN.

Mt. Gilead, April, 1862.

For the Ohio Cultivator.

The State Sorghum Convention.

I desire to correct the statement made by A. H. Wrenn in a letter published in *Field Notes* of the 12th. He states that most of the time of the Convention was occupied by the inventors, manufacturers and agents of Mills & Evaporators, and was made an advertising medium to delineate the advantages of certain mills and pans, &c.

Now as Secretary of the Convention, I pronounce the statement incorrect. A short time during the evening was devoted to a discussion on the merits of the different apparatus, which was acknowledged by many of the farmers, to be profitable to them, they wishing to know which was the best to purchase. Mr. Wrenn being an agent for the sale of Implements and Machinery, expected or looked for an advertising meeting, as did many others; but had he been *awake* during the morning and afternoon session, he would have derived much valuable information in regard to the culture and manufacture of the Sorgho cane.

Since the Convention, I have talked with a great many persons who were in attendance at the Convention, and I have yet to see the first other person than Mr. Wrenn, who has not expressed himself pleased with the success of the meetings, and as having realized much profit from their attendance. I have given considerable time to the study of the subject during the past four years, and I must say I learned considerable at the meetings.

In regard to the committee of publication, I will say, that inasmuch as the other members of the committee have manifested a slight indifference on the subject, I have come to the conclusion to drop the idea, that as the committee was composed of manufacturers of apparatus, it would be almost impossible to prevent the publication from becoming an advertising medium.

I will refund the small amount subscribed for the publication. JOHN L. GILL, JR.

Columbus, April 23*d*, 1862.

He that has never known adversity is but half acquainted with others, or with himself.

Poetry.

For the Ohio Cultivator.

The Quickening.

BY FLORUS B. PLIMPTON.

The robin rests his northward wing,
And twittering in the orchard tree,
Pipes all his sweetest notes for me—
The merriest prophet of the spring.

O minstrel! they who dwell afar
Shall hear thy woodnotes, clear and wild,
And hearing, even the little child
Shall know whose love hath sent thee there.

For us, we know that in Thy hand,
Father, are held the sacred keys
Of our unequal destinies;
We know Thy light is on the land,—

Thy light, Thy smile, Thy glowing breath;
That Nature, blindly understood,
Feels Thee in quickened pulse and blood,
And life springs glorious out of death.

Thou speak'st—the vales in verdure clad
Rejoice, and through the budding trees
The winds blow pleasant melodies,
And all Thy living earth is glad.

Once more the willows toss their plumes;
Like snowiest wool the boxwoods stand
Fringing the forests, and the land
Is sweet with thorn and apple blooms.

The balsam drops its fragrant tears;
Now bursts the bud its waxen cell,
The swollen nut its ivory shell,
And fair the tender corn appears.

By sunny paths the violet springs,
The dandelions on the hills,
And round the golden daffodils
We hear the bees' industrious wings.

From piny height to misty vale
Leap down, O rivulets, and run
To meet the slow-returning sun,
And into distance fade and fail.

Go, chatter on through ferns and flags,
Nor fear the mountain's solemn shades,
But laughing twine you silver braids,
And shout to all the sullen crags.

Go, seek the sleeping lilies, and say
The cowslip in its yellow cup
The golden sunlight drinketh up;
Joy flies—spring hastens—why delay?

For soon the frolic, June, will come
And shake her flaunting roses out,
The woods be wild with song and shout,
And not a voice on earth be dumb.

Cincinnati, April, 1862.

A promise is a just debt, which should always be paid, for honor and honesty are its security.

For the Young Folks.

For the Ohio Cultivator.

About Pottery Ware.

DEAR CHILDREN:—I was sitting by the window this evening and thinking what I should write for you this week, when a little boy came down the street with a jug in his hand. He walked so quick, and looked so happy, I said to myself—he has a jug of maple molassses, and is hurrying home with it to sweeten his pancakes for supper. The pavements were slippery, and as I thought this his foot slipped and down he went into the mud, his jug hit the corner of the curb-stone and went to pieces, leaving the molasses spilled all about upon the ground. Poor little fellow! how he did cry; I was just as sorry for him as I could be, and hoped his mother would not scold him when he got home, for I know he did not mean to, nor was he one bit careless.

And while I was thinking this, I remembered that yesterday I went into a pottery at Middlebury, Summit county, where they make jugs and pans and water-pipe, and all such things. Ah ha! now I have it, I should not have thought to tell the boys and girls about it if that little fellow had not broken his jug. They do not want stories all the time any more than big folks, and I guess they would like to know as well as anybody, how a jug is made, and what it is made out of too, and so I will tell them.

First: there are certain places in the State of Ohio where there is a kind of stiff clay, that can be broken from the clay bank like stone from a quarry, in large lumps or blocks. In color it is here like your slate, —dark, almost black. These lumps of clay are thrown into vats, and crushed under great iron wheels that are turned by water power.

When these great iron wheels have ground the clay and water until it is pliable, like the dough out of which your mother makes bread, and can be rolled and moulded into any shape the worker pleases, he takes a lump about as large as a pint cup (may be a little larger,) dips it or sprinkles

it in water, lays it upon a horizontal wheel called a lathe, the size of a half bushel head, that can be whirled rapidly, like a sewing machine, by a treadle below, which he moves with his left foot. There it lays a lump of clay;—he puts his foot on the treadle, the wheel begins to fly, (oh! I wish you could see him now,) he picks up a piece of wet sponge in his right hand, plunges the fingers of his left hand into the ball of clay and sets the sponge against it with his right; round goes the wheel so fast that you can hardly see it move; the clay begins to rise; up, up it comes, till it surrounds his arm, and instead of a solid lump it is now a hollow jar.

Now he draws out his left hand, and putting both hands round the cone or jar, at the top, he presses it in till he forms the neck of the jug, then with a small iron instrument like a chisel, he smooths and rounds it off, runs his wet sponge over it as it flies round and round on the wheel, till it shines like glass. Then the jug is set away on a shelf in the dry house, to harden. After that it is glazed—that is, it is washed on the outside and in by a mineral preparation that will melt when put in the hot furnace; and this is what makes the shiny coat on all our jugs and jars.

After the glazing is put on, the jugs are put into a furnace, a great many of them side by side, and baked about three days; then they come out solid and hard, and ready for use.

Now, little ones, how do you think that man learned to take lumps of clay with his hands, to make a jug in just two minutes, and to make a thousand of them one after another so nearly alike, that you can tell no difference in them, each one to hold just two quarts or four as he pleases,—is it wonderful?

The whole secret is found in his perseverance. I expect when he was a little boy, that he could not mould a lump of clay into a jug or pan, any better than you can mould your mud balls into shapely articles, when you play with them after a shower of rain.

He has learned his trade, and so must you if you would do things well, trying every day to do your work better than you did yesterday, till at last it is done so well that it needs no further effort. No doubt he was tired sometimes when he was a little boy; so are you when you play too hard; but he tried again and so must you, and never give up till you have conquered.

Now after this dull story about jugs, I wish I could show you this beautiful, dashing, leaping, foaming water-fall that comes rushing down the hill, roaring and tumbling over the rocks, and falling into chasms, and hollows, and churning itself into a white foam like the soap suds in your mother's wash tub; would you not laugh and clap your hands? The boys would all be for fishing in the pool below, and the girls for hunting clam shells and pebble stones on the banks.

But here comes little Julie, with her blue eyes laughing with mirth and fun, to call me to dinner. Good by.

AUNT FANNY.

Be Kind to Your Sisters.—Boys, be kind to your sisters. You may live to be old, and never find such tender, loving friends as these sisters. Think how many things they do for you; how patient they are with you; how they love you in spite of your ill temper or rudeness, how thoughtful they are for your comfort; and be you thoughtful of theirs. Be ever ready to oblige them, to perform any little office for them that lies in your power. Think what you can do for them, and if they express a wish be ready to gratify it, if possible. You do not know how much happiness you will find in so doing. I never knew a happy respectable man who was not in his youth kind to his sisters.

LIFE A VOYAGE.—Life is a voyage, in progress of which we are perpetually changing our scenes. We first leave childhood behind us, then youth, then the years of ripened manhood, then the better and more pleasing part, old age.

SPARE MOMENTS are the gold dust of time. Of all the portions of our life, they are the most fruitful in good or evil. They are the gaps through which the serpents of temptation find the easiest access to the garden of the soul.

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